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ON THE COVER: ABDOMENS OF THREE SPECIES OF *SIMLOPS* IN ANTERIOR VIEW, SHOWING THE SCUTAL DIVERSITY IN THE GENUS (UPPER LEFT, *S. CACHORRO,* MALE; UPPER RIGHT, SAME, FEMALE; BOTTOM LEFT, *S. GUYANENSIS,* FEMALE; BOTTOM RIGHT, *S. BODANUS,* FEMALE).

BONALDO ET AL.: *SIMLOPS*, NEW GENUS OF GOBLIN SPIDERS

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SIMLOPS, A NEW GENUS OF GOBLIN SPIDERS (ARANEAE: OONOPIDAE) FROM NORTHERN SOUTH AMERICA

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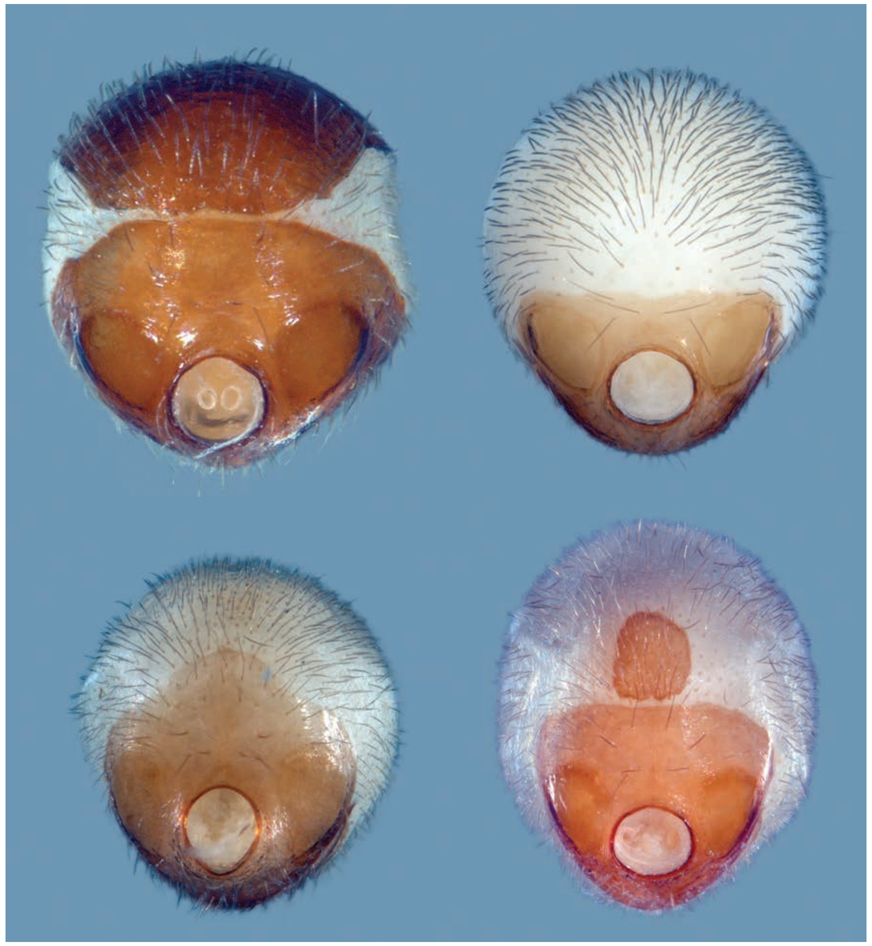

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SIMLOPS, A NEW GENUS OF GOBLIN SPIDERS (ARANEAE: OONOPIDAE) FROM NORTHERN SOUTH AMERICA

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ABSTRACT

A new genus of goblin spiders, *Simlops*, is proposed for 15 species found in Brazilian and Colombian Amazonia and southern Caribbean (Venezuela and Guyana). The new genus belongs to the *Scaphiella* complex, a group of Neotropical genera that share a sexually dimorphic condition in which the abdominal dorsal scutum is present in males but absent in females. *Simlops* is hypothesized to be a monophyletic group united by a unique conformation of the male endites, which present three apical portions, a prolateral, curved process, with laminar apices, a retrolateral process and a median, more dorsal, unsclerotized portion. The species *Triaeris bodanus* Chickering, 1968, is transferred to *Simlops* and the female of this species is described for the first time. The remaining 14 species are newly described: *S. bandeirante* Ott, *S. cristinae* Santos, *S. campinarana* Brescovit, *S. jamesbondi* Bonaldo, *S. juruti* Bonaldo, *S. machadoi* Ott, *S. miudo* Ruiz, *S. nadinae* Ruiz, *S. pennai* Bonaldo (type species), *S. platnicki* Bonaldo, and *S. similis* Ott, all from Brazilian Amazonia; *S. cachorro* Ruiz from Colombian Amazonia; *S. guatopo* Brescovit from Venezuela; and *S. guyanensis* Santos from Guyana.

INTRODUCTION

The new genus described below belongs to a putatively monophyletic assemblage of goblin spiders whose recent recognition challenged the foundations of Oonopidae classification. Simon (1893) divided the family into two informal groups, the Loricatae, harboring oonopids with heavily sclerotized bodies, and the Molles, which includes the remaining, soft-bodied goblin spiders. This fundamental dichotomy was later fixed as formal categories at subfamily level, Gamasomorphinae for the Loricatae and Oonopinae for the Molles (Petrunkevitch, 1923). The Planetary Biodiversity Inventory (PBI) on this family has provided strong evidence that several genera, as in the case of the group herein addressed, are composed of sexually dimorphic species, in which the males are heavily sclerotized, presenting fully developed abdominal scuta, while the females are less sclerotized, with small or no abdominal scuta. This condition suggests that several independent instances of gain or loss of body sclerotization, especially on the abdomen, may have occurred during the evolutionary history of Oonopidae.

Platnick et al. (2012a) clarified the classification of oonopids, arguing for the monophyly of the two most basal branchings of Oonopidae, Orchestininae, and Sulsulinae, and stressing the view that Oonopinae must harbor the bulk of oonopid genera, including those groups formerly regarded as belonging to "Gamasomorphinae," on the grounds that they share the loss of a heavily sclerotized, thick-walled sperm duct in the male palp. These authors also hypothesized that the New Zealand genus *Kapitia* Forster stands as the sister group of the "higher Oonopinae," an informal group united by the reduction in the number of tarsal organ receptors and by the acquisition of a clumped eye arrangement. The groups hitherto included in "Gamasomorphinae" share at least one putative synapomorphy: the shifting of the male gonopore to the epigastric scutal surface. However, the hypothesis presented by Platnick et al. (2012a) prevents Gamasomorphinae to be recognized as a taxon of subfamily rank, even if it turns out to be a monophyletic group within Oonopinae. The scenario resulting from the fall of Gamasomorphinae is challenging and the task of recognizing homologous instances of modification on the body sclerotization will play a central role in future efforts to detail the classification of the higher Oonopinae.

All species here assigned to the new genus *Simlops* present a clumped eye arrangement (figs. 6, 34, 63) and are likely to share with other higher oonopines the tarsal organ receptor pattern reduced to 3-3-2-2 (as in figs. 13–20, only *S. juruti* surveyed). As stressed by Platnick et al. (2012a), only a few putatively monophyletic clusters of genera can be distinguished so far within the higher Oonopinae. This large group is now acknowledged to present extremely diverse patterns of body sclerotization, including, between the extremes of fully soft and fully sclerotized forms, instances in which the cephalothorax is sclerotized but the abdominal dorsal or postepigastric scuta is absent in both sexes (as in the *Stenoonops* group of genera, see Platnick and Dupérré, 2010b), as well as instances in which the females lack the dorsal scutum that is found in the males. That last condition occurs in two groups of genera, both of them exclusively Neotropical. From the 13 genera already recognized in the *Dysderina* complex (Platnick and Dupérré, 2011a, 2011c, 2011d; 2012; Abrahim et al., 2012; Platnick et al., 2013a, 2013b; Platnick et al., 2013c), representatives of three (*Scaphidysderina* Platnick and Dupérré, *Paradysderina* Platnick and Dupérré, and *Semidysderina* Platnick and Dupérré) present that kind of sexual dimorphism. However, characters such as carapace shape and microsculpture, sternal morphology and leg spination, suggest that *Simlops* belongs to another cluster of genera, the *Scaphiella* complex, which is presently composed of five highly diverse genera, all of which share the dimorphic pattern of abdominal sclerotization.

The genera *Scaphiella* Simon, revised by Platnick and Dupérré (2010a), and *Escaphiella*, proposed by Platnick and Dupérré (2009), are considered to form a monophyletic group supported by the extreme development of the female ventral scutum, which is extended laterally (justifying the popular name "taco-spiders" for these animals). A second putatively monophyletic lineage in the *Scaphiella* complex is composed by the genera *Niarchos* and *Scaphios*, both recently established by Platnick and Dupérré (2010c). Those two genera present a further instance of sexual dimorphism: in females the ventral sclerite of the pedicel, the plagula, is not fused with the posterior end of the sternum, while in males, plagula and sternum are completely fused. A fifth genus, *Pescennina*, revised by Platnick and Dupérré (2011b), is supported by many genital and somatic modifications, including some related to ant mimicry.

The species treated below can be easily recognized by the combined presence of a *Niarchos*-like dorsal abdominal scutal dimorphism, a male palpal bulb completely fused to the cymbium, with a thick embolus accompanied by a conductor, and a female pedicel fused ventrally to sternum (figs. 174, 197, 222, 265). However, selecting putatively derived characters that could support the monophyly of this group is not an easy task. The male endites of *Simlops* present an apical excavation that subtends three apical portions, a prolateral, curved process, with laminar apices, a retrolateral process and a median, more dorsal, unsclerotized portion (figs. 275–289). Distally excavated male endites are unusual among the known genera of the *Scaphiella* complex. *Niarchos*, *Scaphios,* and *Pescennina* do not present such a distal excavation, having instead a single, triangular, posteriorly directed apical projection in *Niarchos*, a toothlike posteromedian apical process in *Scaphios*, or a stout projection in *Pescennina*. On the other hand, in members of both *Scaphiella* and *Escaphiella*, the male endites are indeed excavated, but this excavation is more proximally situated, producing two long, parallel branches. However, none of these groups presents the third, weakly sclerotized apical portion that lies between the two lateral branches. Thus, the monophyly of *Simlops* is here hypothesized, based on the tripartite shape of the male endites.

So far as we know, only one of the 15 species here included in *Simlops* has previously been described. Chickering (1968) redescribed the type species *Triaeris stenaspis* Simon, describing two additional species he placed in *Triaeris* Simon. This genus was recently revised by Platnick et al. (2012b), who indicated that it belongs to the Neotropical African *Zyngoonops* group, rejecting the placement of both of Chickering's species in *Triaeris*. One of these species, *T. bodanus* Chickering, is here transferred to *Simlops*. The original description of *T. bodanus* is somewhat intriguing. Chickering based the original description on only two males, but the MCZ material collected by him four years prior to the publication date, plus the AMNH material he probably studied represent a batch of several specimens, including the females, undescribed until now. Judging by the collecting dates, it is evident that several males and females were collected together, but this evidence was dismissed during the sorting process, as most of these specimens were neatly segregated by sex and placed in different vials. As stressed by

Platnick (in lit.), Chickering's normal approach was to describe males and females as different species, unless he was certain the specimens were conspecific. Chickering's course of action is easily understandable, given the dorsal abdominal scutal dimorphism referred to above and the Loricatae/Molles paradigm in vogue at that time. However, *Simlops bodanus* (Chickering) is the only species treated below in which the females present a small, yet well-sclerotized dorsal abdominal scutum (figs. 247, 248), making this species the one that presents the least sexual dimorphism in the genus and thus resembling in that regard the females of the type species of *Triaeris*. This species is also remarkable for another reason, the presence of highly modified setae near the tarsal claws presenting bulging, smooth, clawlike tips (figs. 23, 24). These false claws are present in some other species of *Simlops* (figs. 25, 26), although not as conspicuously as in *S. bodanus*. Interestingly, false claws are also present in *Triaeris*, as reported by Platnick et al. (2013c), as well as in other putatively unrelated genera, such as the Asian *Aprusia* Simon (see Grismado et al., 2011), the Malagasy *Malagiella* Ubick and Griswold (see Ubick and Griswold, 2011) and the Neotropical *Ischnothyreus* Simon (Platnick et al., 2012c).

The species here described can be arranged in five informal species groups, defined mainly by the shape of the embolus and conductor. The group that contains the type species, *Simlops pennai*, presents an apically directed embolus, which is nearly as wide basally as apically, and a sclerotized, basally expanded conductor (figs. 290–297). The conductor basal expansion is directed posteriorly in *S. machadoi* and *S. similis* (figs. 295, 297) but dorsally in *S. pennai* and *S. miudo* (figs. 291, 293). Three species, *S. juruti*, *S. nadinae*, and *S. campinarana* present a distally widened embolus, with a characteristic prolateral process, and small, completely hyaline conductor (figs. 298–303). Another group, containing *S. bandeirante* and *S. cristinae*, may be united by having the embolar insertion displaced retrolaterally, with the distal prolateral section of bulbus angling almost 90° in dorsal view. These two species also share a particularly wide ejaculatory opening (figs. 304–307), but the conductor of *S. cristinae* is extremely modified, presenting a wide, unsclerotized base with an apically directed protrusion similar (but probably not homologous) to the expansion found in the conductor of the previous group. Three other species, *S. cachorro*, *S. jamesbondi,* and *S. platnicki* share remarkable endites with a long retroapical process, which is particularly developed in *S. platnicki* (figs. 284–286). Of these, at least *S. jamesbondi* and *S. platnicki* also share a wide, unsclerotized embolar tip and a completely sclerotized conductor (figs. 308–309, 312–313). However, whereas in *S. jamesbondi* the conductor is inserted on the bulb, adjacent to embolar base, in *S. platnicki* the conductor is inserted in the middle of the embolus. *S. cachorro* presents a highly complex, partially sclerotized conductor that is loosely attached to the bulb and to the basal part of embolus by a membranous basal section (figs. 310–311).

The remaining three species, *S. guatopo*, *S. bodanus,* and *S. guianensis*, present a filiform distal third of the embolus, a condition shared by many species in the *Scaphiella* complex and thus a putative symplesiomorphy. At least *Simlops bodanus* and *S. guianensis* may represent basal taxa, sister to all other *Simlops*. Besides the filiform embolus, they also share another putatively symplesiomorphic character, the conspicuous female posterior receptaculum (figs. 329, 330), which is present at least in *Pescennina*. It is apparently absent in all remaining *Simlops*, except perhaps for *S. platnicki*, where it appears to be encapsulated by a reinforced epigynal transverse bar (figs. 225–228, 328). As discussed above, females of *Simlops bodanus* are remarkable in presenting a small, round dorsal scutum, which is completely separated from the frontal margin of the epigastric scutum (fig. 248). In females of *S. guyanensis*, the frontal margin of the epigastric scutum is not straight, as in all other *Simlops* species, but presents a median protusion (fig. 264) that may represent the homologous counterpart of the dorsal scutum of *S. bodanus* (see also the cover illustration). These features could be interpreted as different steps of an independent gain of a dorsal scutum in females, thus providing evidence that these putative basal species form a monophyletic group. Alternatively, they could be regarded as stages in the loss of a plesiomorphically present dorsal scutum, providing support for a monophyletic group composed by all *Simlops* species but *S. bodanus* and *S. guianensis*.

The genus *Simlops* presents a larger distribution than that of *Niarchos* and *Scaphios*, which are restricted to the northern Andean mountains and neighboring areas, but not as large as the other representatives of the *Scaphiella* complex, which occur from the United States or northern Mexico to as far south as northern Brazil (*Scaphiella*), southern Brazil (*Pescennina*), or Chile (*Escaphiella*). The distribution of *Simlops* species is typically Amazonian, with most species occurring in the Amazon Basin in Brazil and Colombia. Interestingly, the group that includes the three species with the plesiomorphic slender emboli (*S. guatopo*, *S. bodanus*, and *S. guyanensis*) seems to escape that pattern, occurring in south Caribbean localities instead of in the Amazon Basin, which suggests this group as an interesting subject for biogeographic studies.

METHODS

Specimens were examined and photographed using a Leica M205A stereomicroscope with a DFC420 camera and a Leica MZ16A with a DFC500. Compound photographic images were assembled using the Leica application suite (LAS) software package. Specimen parts were prepared for scanning electron microscopy (SEM) by cleaning in an ultrasonic digital washer SoniClean 2P for few seconds, dehydrated through stages of 80% to 100% ethanol, and air dried beneath a warm light. SEM images were taken with a LEO 1450VP scanning electronic microscope at MPEG. Male palp drawings were made in MPEG's Leica M205A with a camera lucida. Drawings of female genitalia were made with a Leica DM1000 compound microscope with a camera lucida. Descriptions were generated through the goblin spider PBI descriptive database and shortened where possible. All measurements are in millimeters and were made with a Leica M205A using the LAS Live Measurement module. For spination description, only surfaces bearing spines were reported. The species are treated in the text according to the informal groups of species discussed in the introduction, which are reflected in the differential diagnosis of each species. As in Platnick and Dupérré (2011b), only differences from the male (apart from the lack of male endite modifications) are mentioned in the descriptions of females. Distribution maps were assembled and edited using DIVA-GIS (Hijmans et al., 2005) and Quantum Gis 1.8.0 (Quantum GIS Development Team, 2012). High-resolution versions of the published images and supplementary material will be available on the oonopid Planetary Biodiversity Inventory (PBI) project's website (http://research.amnh.org/oonopidae).

COLLECTIONS EXAMINED

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INPA	Instituto Nacional de Pesquisas da Amazônia, Manaus (C. Magalhães)
MCN	Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre (R. Ott)
MCZ	Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts (L. Leibensperger; G. Giribet)
MPEG	Museu Paraense Emílio Goeldi, Belém (A.B. Bonaldo)
SMNK	Staatliches Museum für Naturkunde Karlsruhe, Karlsruhe (H. Höfer).

Simlops Bonaldo, Ott, and Ruiz, new genus

TYPE SPECIES: *Simlops pennai* Bonaldo, new species.

ETYMOLOGY: The generic name, masculine in gender, is an unpublished name by

A.M. Chickering, and is probably the contraction of Simla, a locality in Trinidad, and *Oonops*. The name appeared in Chickering's labels of specimens actually described as *Triaeris bodanus* Chickering, 1968, a species now transferred to *Simlops*.

DIAGNOSIS: Members of *Simlops* resemble those of *Niarchos*, *Scaphios*, *Scaphiella,* and *Escaphiella* by the sexually dimorphic abdomen, in which males present a fully developed dorsal scutum that is small or absent in females. They differ from those of *Niarchos* and *Scaphios* by the absence of the sexually dimorphic sternum-pedicel insertion (fused in males and unfused in females; see Platnick and Dupérré, 2010c: figs. 1–4), and from those of *Scaphiella* and *Escaphiella* by the absence of lateral extensions of the female abdominal ventral scuta (see Platnick and Dupérré, 2009: front cover illustration). The monophyly of the genus is putatively supported by the male endites with an apical excavation that originates three apical portions, a prolateral, curved process, with laminar apices, a retrolateral process and a median, more dorsal, unsclerotized portion (figs. 185, 208, 275–289).

DESCRIPTION: Total length of males 1.63–2.10, of females 1.84–2.63. **Cephalothorax**: Carapace without any color pattern, elongate oval in dorsal view (figs. 33, 148), more ovoid in females (figs. 2, 70, 124); pars cephalica slightly elevated in lateral view (figs. 1, 8, 36, 270), narrowed anteriorly nearly 0.5 times its maximum width (figs. 54, 116; narrowing less abrupt in *S. bandeirante* and *S. cristinae*, figs. 148, 156), with rounded posterolateral corners; posterolateral edge without pits, posterior margin not bulging below posterior rim, anterolateral corners without extension or projections, posterolateral surface without spikes, surface of elevated portion of pars cephalica generally granulate (figs. 1, 2, 54), sometimes finely reticulate (*S. bodanus*, *S. cachorro*, *S. cristinae*, *S. machadoi*, and *S. similis*; figs. 62, 177, 243), rarely smooth (*S. bandeirante* and *S. platnicki*; figs. 4, 5, 148, 199); sides generally granulate (figs. 1, 3), rarely scaly (*S. cachorro* and *S. platnicki*; figs. 4, 180); lateral margin straight, rebordered; pars thoracica without depressions, fovea absent, without radiating rows of pits; lateral margin without denticles; plumose setae near posterior margin of pars thoracica absent; nonmarginal pars cephalica setae light, needlelike, present in U-shaped row (in *S. platnicki*, U-shaped row broad, composed by scattered setae); nonmarginal pars thoracica setae light, needlelike. Clypeus high, vertical in lateral view, margin slightly rebordered, sinuous in front view, median projection absent. Eyes: ALE separated by more than their radius but less than their diameter (by less than their radius in *S. jamesbondi*); ALE-PLE touching or separated by less than ALE radius; PME touching or separated by less than their radius; PLE-PME separated by less than PME radius (touching in *S. platnicki*). ALE separated from edge of carapace by their radius or more; setae present, needlelike. Chilum absent. Six eyes, well developed (reduced in *S. bandeirante*, fig. 149), generally all subequal, but sometimes (*S. campinarana*, *S. jamesbondi*, *S. guyanensis*) ALE largest; generally all eyes circular; in *S. cachorro*, *S. campinarana*, *S. jamesbondi,* and *S. similis*, PME oval; *in S. platnicki*, all eyes oval. Posterior eye row procurved from front, straight in *S. guyanensis*. Sternum longer than wide (in *S. platnicki* nearly as long as wide), coloration uniform, not fused to carapace, median concavity absent, with radial furrows between coxae I–II, II–III, III–IV, furrows wrinkled; radial furrow opposite coxae III absent, surface without pits, generally finely punctuate (figs. 9, 35, 142), smooth in *S. guyanensis* and *S. platnicki* (figs. 10, 201, 253); lateral margin without infracoxal grooves, extensions of precoxal triangles absent, sickle-shaped structures absent, anterior margin unmodified, posterior margin not extending posteriorly of coxae IV, anterior corner unmodified, distance between coxae approximately equal, lateral margins unmodified, without posterior hump; setae sparse, light, needlelike, evenly scattered, originating from surface, without hair tufts. Chelicerae straight (*S. bodanus*, *S. cachorro*, *S. cristinae*, *S. jamesbondi*, *S. machadoi*, *S. nadinae*, *S. pennai*, *S. platnicki,* and *S. similis*) or slightly divergent (*S. bandeirante*, *S. campinarana*, S. *guatopo*, *S. guyanensis*, *S. juruti,* and *S. miudo*); anterior face unmodified; fangs without toothlike projections, directed medially, shape normal, without prominent basal process, tip unmodified; setae light, needlelike, evenly scattered; paturon inner margin with short interdigitating setae, scattered in *S. jamesbondi* and *S. platnicki*. Paturon distal region unmodified, posterior surface unmodified, promargin unmodified, inner margin unmodified, laminate groove absent. Labium generally triangular (rectangular in *S. jamesbondi* and *S. platnicki*), not fused to sternum, anterior margin indented at middle (deeply incised in *S. bandeirante*, fig. 150), same as sternum in sclerotization; subdistal portion with unmodified setae, with 3–5 setae on anterior margin, except in *S. jamesbondi*, with 6 or more. Endites not modified in females, distally excavated in males, with prolateral, median, and retrolateral processes; same as sternum in sclerotization, except prolateral and retrolateral processes, generally much more heavily sclerotized than sternum; median process unsclerotized (figs. 275–289); serrula present in single row, posteromedian part unmodified. Female palp without claw; spines absent; patella without prolateral row of ridges. **Abdomen:** Ovoid, without long posterior extension, rounded posteriorly; interscutal membrane rows of small sclerotized platelets absent; dorsum soft portions without color pattern. Book lung covers large, generally ovoid (round only in *S. jamesbondi* and *S. platnicki*), without setae, anterolateral edge unmodified. Posterior spiracles connected by groove. Pedicel with scutopedicel region unmodified, plumose hairs absent, matted setae on anterior ventral abdomen in pedicel area absent, cuticular outgrowths near pedicel absent. Pedicel tube of males medium, ribbed (in *S. platnicki*, short, unmodified, fig. 203); Ventral pedicel sclerite fused to sternum in both males and females (figs. 75, 145, 174, 197, 222, 265); Dorsal scutum present in males, absent in majority of females (except in females of *S. bodanus*, fig. 248); male dorsal scutum generally strongly sclerotized (weakly sclerotized in *S. bandeirantes* and *S. platnicki*, figs. 151, 202), covering 1/2 to 3/4 of abdominal length (covering full length of abdomen in *S. campinarana*), not fused to epigastric scutum, smooth, anterior half without projecting denticles. Epigastric scutum generally strongly sclerotized (weakly sclerotized in *S. bandeirante* and *S. platnicki*), surrounding pedicel, not protruding, small lateral sclerites absent, without lateral joints in females; in males extending far dorsal of pedicel, in females not extending far dorsal of pedicel in *S. machadoi*, *S. similis*, and *S. platnicki* (figs. 76, 91, 220); postepigastric scutum of males generally strongly sclerotized (weakly sclerotized in *S. bandeirante* and *S. platnicki*, figs. 152, 203), fused to epigastric scutum, anterior margin unmodified, without posteriorly directed lateral apodemes; in females short, only around epigastric furrow, not fused to epigastric scutum, generally only reaching groove connecting posterior spiracles (extending beyond groove in *S. bodanus* and *S. campinarana* figs. 147, 250), generally without discrete lateral sclerotizations (present only in *S. machadoi* and *S. similis*, figs. 77, 93). Spinneret scutum absent, without fringe of setae, supraanal scutum absent. Dorsum setae present, light, needlelike. Epigastric area setae uniform, light, needlelike. Postepigastric area setae present, light, needlelike. Dense patch of setae anterior to spinnerets absent. Interscutal membrane with setae. Colulus generally represented only by setae (in *S. platnicki*, a small plate with two setae). Spinnerets examined by SEM only in female of *S. pennai* (figs. 29–32); anterior lateral spinnerets with single major ampullate gland spigot and three piriform gland spigot (fig. 30); posterior median spinnerets with at least six spigots (fig. 31); posterior lateral spinnerets with 13 aciniform spigots (fig. 32). Male epigastric region with sperm pore small, situated at level of anterior spiracles, generally oval (triangular, with rounded angles in *S. bodanus*, *S. cachorro*, *S. guyanensis*, *S. nadinae*, and *S. platnicki*; fig. 212); epigastric furrow without Ω-shaped insertions, without setae. **Legs:** femur IV not thickened, same size as femora I–III, patella plus tibia I shorter than carapace, except in *S. jamesbondi*, near as long as carapace; tibia I unmodified, tibia IV ventral scopula absent; metatarsi I and II mesoapical comb absent, metatarsi III and IV weak ventral scopula absent. Leg spines generally absent, present only at tibia I of *S. cachorro,* at tibia IV of males of *S. platnicki* and at all tibiae and at metatarsus I of females of *S. platnicki*. Tarsal proclaws and retroclaws inner face smooth; tarsus I superior claws with six teeth on lateral surface of proclaw; tarsus III superior claws with five teeth on lateral surface of retroclaw; tarsus IV superior claws with five teeth on lateral surface of retroclaw (figs. 21–28). Inferior claw absent. Claws of legs III and IV accompanied by modified setae with small clawlike tips (false claws) at least in *S. pennai* and *S. juruti* (figs. 25, 26); false claws extremely developed in *S. bodanus* (figs. 23, 24), absent at least in *S. platnicki* (figs. 27, 28). Trichobothria tibia IV three; metatarsus I one, IV one; base longitudinally narrowed, aperture internal texture not gratelike, hood covered by numerous low, closely spaced ridges (figs. 11, 12). Tarsal organs of palp and legs I and II with three sensillae (figs. 13, 14, 17, 18), of legs III and IV with two sensillae (figs. 15, 16, 19, 20) (only *S. juruti* surveyed). **Genitalia:** Male palp normally sized, not strongly sclerotized, right and left palps symmetrical; proximal segments pale orange, cymbium and bulbus pale orange to yellow, embolus dark; trochanter normally sized, unmodified; femur normally sized, two or more times as long as trochanter, attaching to patella basally, without posteriorly rounded lateral dilation; patella shorter than femur, not enlarged, without prolateral row of ridges, setae unmodified; cymbium completely fused with bulb, no seam visible, not extending beyond distal tip of bulb, plumose setae absent, without distal patch of setae; stout setae absent, except in *S. cristinae*, with two stout setae in prolateral margin; bulb 1 to 1.5 times as long as cymbium. Embolus without prolateral excavation, long, typically bent prolaterally; generally with wide apices (filiform in *S. bodanus*, *S. guyanensis,* and *S. guatopo*, figs. 314–319); generally inserted retroapically (inserted proapically in *S. bandeirante* and *S. cristinae*, figs. 304, 306); apices sclerotized (wide, partially hyaline in *S. jamesbondi* and *S. platnicki*, figs. 309, 313). Conductor always present, hyaline (figs. 299, 303), partially sclerotized (figs. 314, 317) or completely sclerotized (figs. 291, 309, 313); inserted prolaterally in apices of bulbus (figs. 291, 296), in embolar base (figs. 305, 310) or in embolar body (fig. 312). Female genitalia without anterior receptaculum, anteromedian rod present, generally with T-shaped tip; transverse bar straight (fig. 320), recurved (fig. 325) or M-shaped (fig. 323), bearing short posterior apodemes; posterior receptaculum conspicuous only in *S. bodanus* and *S. guyanensis* (figs. 329, 330).

DISTRIBUTION: South Caribbean to Amazon basin.

KEY TO SPECIES

1. Males 2
– Females (those of *S. bandeirante*, *S. cristinae*, *S. miudo,* and *S. guatopo*, unknown) 16
2. Endites with extremely long apical process (figs. 208, 286) . . . . *S. platnicki*
– Endites with retroapical process not so developed (figs. 275, 282, 285) 3
3. Embolus flattened dorsoventrally, with a prolateral process (figs. 298, 300, 302) . . . 4
– Embolus otherwise 6
4. Embolar prolateral process apical (figs. 300, 301) . . . . *S. nadinae*
– Embolar prolateral process median (figs. 298, 302) 5
5. Embolar prolateral process restricted to prolateral margin (fig. 298) . . . . . *S. juruti*
– Embolar prolateral process a transverse incision occupying half the width of embolus dorsal surface (fig. 302) . . . *S. campinarana*
6. Embolus arched dorsoventrally, distal third filiform (figs. 314, 317, 319) 7
– Embolus otherwise 9
7. Conductor fully sclerotized, with basal processes (figs. 318, 319) . . . . *S. guatopo*
– Conductor partially sclerotized, without processes (figs. 314, 317) 8
8. Embolus relatively long (almost same length as cymbium), with basal constriction (figs. 234, 314) . . . . *S. bodanus* (Chickering)
– Embolus relatively short (less than half the cymbial length), not basally constricted (figs. 256, 317) . . . . *S. guyanensis*
9. Embolus inserted prolaterally, flattened laterally, copulatory opening large, located in a prolateral, apical excavation (figs. 305, 307) 10
– Embolus otherwise 11
10. Conductor small and relatively short (less than half the embolus length), with narrow base (figs. 304, 305) . . . . *S. bandeirante*
– Conductor large and relatively long (almost same length as embolus), with wide base (figs. 306, 307) . . . . *S. cristinae*
11. Conductor with basal lamellae (figs. 291, 293, 295, 297) 12
– Conductor otherwise 15
12. Basal lamellae of conductor extending toward base of cymbium (figs. 294, 296) 13

– Basal lamellae of conductor directed dorsally (figs. 291, 293) 14
13. Embolus tubular; conductor shorter than embolus (figs. 294, 295) . . . . . . *S. machadoi*
– Embolus flattened apically; conductor larger than embolus (figs. 296, 297) . . . . *S. similis*
14. Basal lamellae of conductor wide, distal portion of conductor filiform (figs. 292, 293) . . . . *S. miudo*
– Basal lamellae of conductor narrow, distal portion of conductor lamellar (figs. 290, 291) . . . . *S. pennai*
15. Conductor partially hyaline, compact, folded on itself (figs. 310, 311) . . . . . . *S. cachorro*
– Conductor fully sclerotized, long, and flattened (figs. 308, 309) . . . . *S. jamesbondi*
16. Abdomen with a discrete frontal round scutum (fig. 248) . . . *S. bodanus* (Chickering)
– Abdomen otherwise. 17
17. Frontal margin of epigastric scutum with median protrusion (fig. 264) . . . *S. guyanensis*
– Frontal margin of epigastric scutum without median protrusion. 18
18. Postepigastric scutum extending posteriorly, beyond groove connecting posterior spiracles (fig. 147). . . . . *S. campinarana*
– Postepigastric scutum restricted to groove connecting posterior spiracles (figs. 93, 115, 176) 19
19. Small, discrete sclerotizations lateral to postepigastric scutum present (figs. 77, 93) . . . 20
– Postepigastric scutum without such sclerotizations (fig. 53, 131, 198) 21
20. Posterior margin of epigastric scutum procurved, medially sclerotized (fig. 77). . . . . *S. machadoi*
– Posterior margin of epigastric scutum straight, not medially sclerotized (fig. 93). . . . . *S. similis*
21. Epigastric furrow medially incised (figs. 115, 323) . . . . *S. juruti*
– Epigastric furrow otherwise 22
22. Postepigastric scutum enlarged laterally around posterior spiracles (figs. 53, 131) 23
– Postepigastric scutum otherwise 24
23. Epigastric furrow without median sclerotization (fig. 53); Vulva with wide transverse bar and long apodemes (fig. 320) . . . . *S. pennai*
– Epigastric furrow with median sclerotization (fig. 131); Vulva with narrow transverse bar and short apodemes (fig. 324). . . *S. nadinae*
24. Anterior margin of postepigastric scutum with wide sclerotized band (figs. 198, 224) 25
– Anterior margin of postepigastric scutum without such band (fig. 176); vulva with long, T-shaped median rod (fig. 326) . . . *S. jamesbondi*
25. Lateroanterior margins of postepigastric scutum expanded anteriorly (fig. 198); vulva with long, acute anteriomedian rod (fig. 327) . . . . *S. cachorro*
– Lateroanterior margins of postepigastric scutum not expanded anteriorly (fig. 224); vulva with short, bush-shaped anteriomedian rod (fig. 328). . . . . *S. platnicki*

Simlops pennai Bonaldo, new species

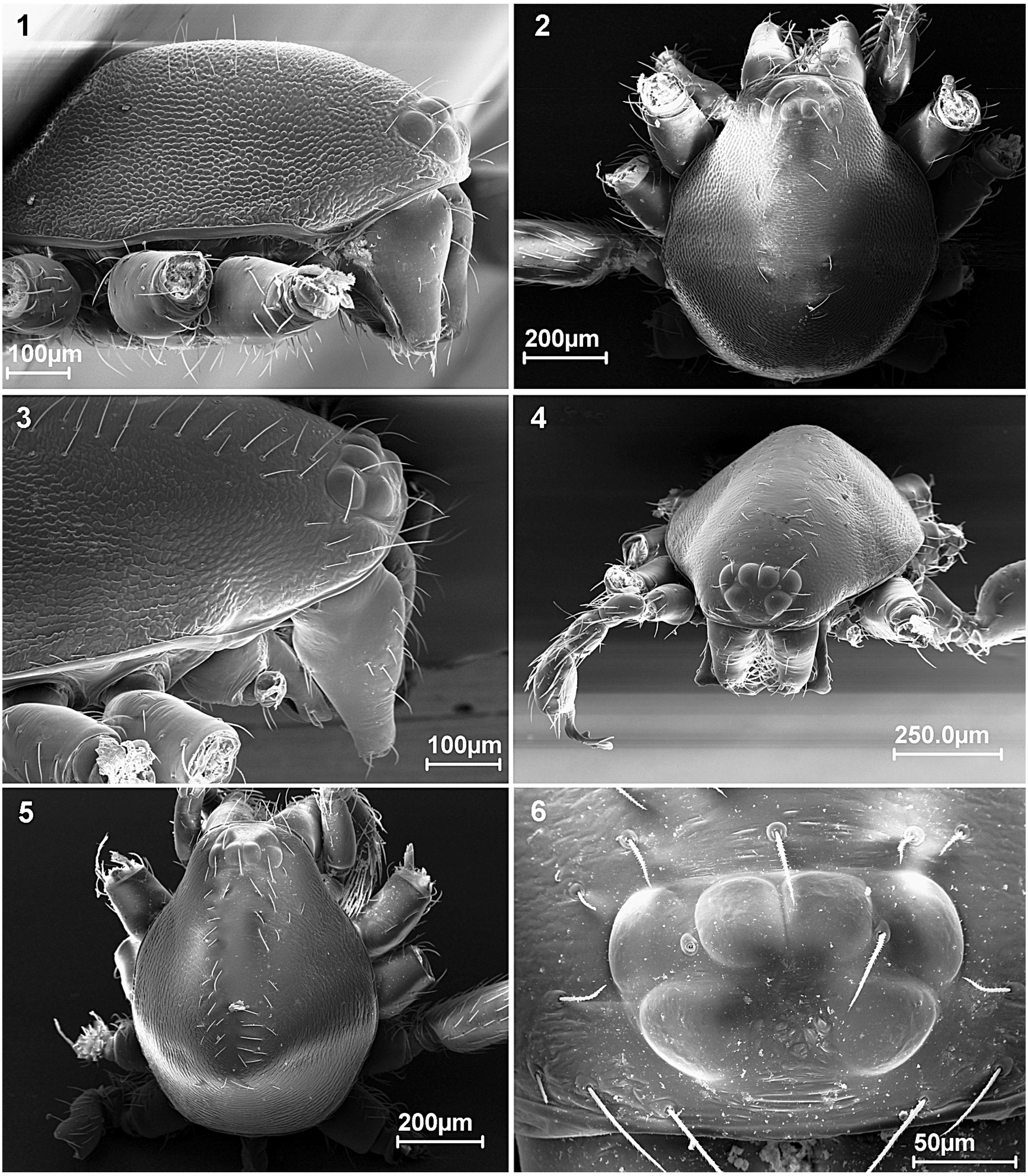
Figures 1, 2, 25, 29–53, 275, 290, 291, 320

Types: Male holotype from Estação Científica Ferreira Penna, Floresta Nacional de Caxiuanã, 01°44′18.02″S 51°27′48.01″W, Oct. 01, 2003 to Nov. 01, 2003, Equipe MPEG col. (MPEG 15374, PBI_OON 40507); female paratype from same locality, Aug. 17, 2003, J.A.P. Barreiros col. (MPEG 10293, PBI_OON 40508).

Etymology: The specific name is a patronym in honor of Domingos Soares Ferreira Penna, who, by suggestion of Louis Agassiz, founded in 1866 the Phylomatic Association that later became the Goeldi Museum. The types were collected in a scientific station, also named after Ferreira Penna, that is maintained by the museum.

Diagnosis: Males of *Simlops pennai* resembles those of *S. miudo*, S. *machadoi,* and *S. similis* by the sclerotized, basally expanded conductor; differ from those of *S. machadoi* and *S. similis* by the basal expansion of conductor directed dorsally and from those of *S. miudo* by wide distal third of conductor (figs. 39, 46, 290, 291). Females can be readily distinguished from those of *S. machadoi* and *S. similis* by the epigastric furrow without median sclerotization (fig. 53) and, internally, by the nearly straight transverse bar and divergent apodemes (fig. 320).

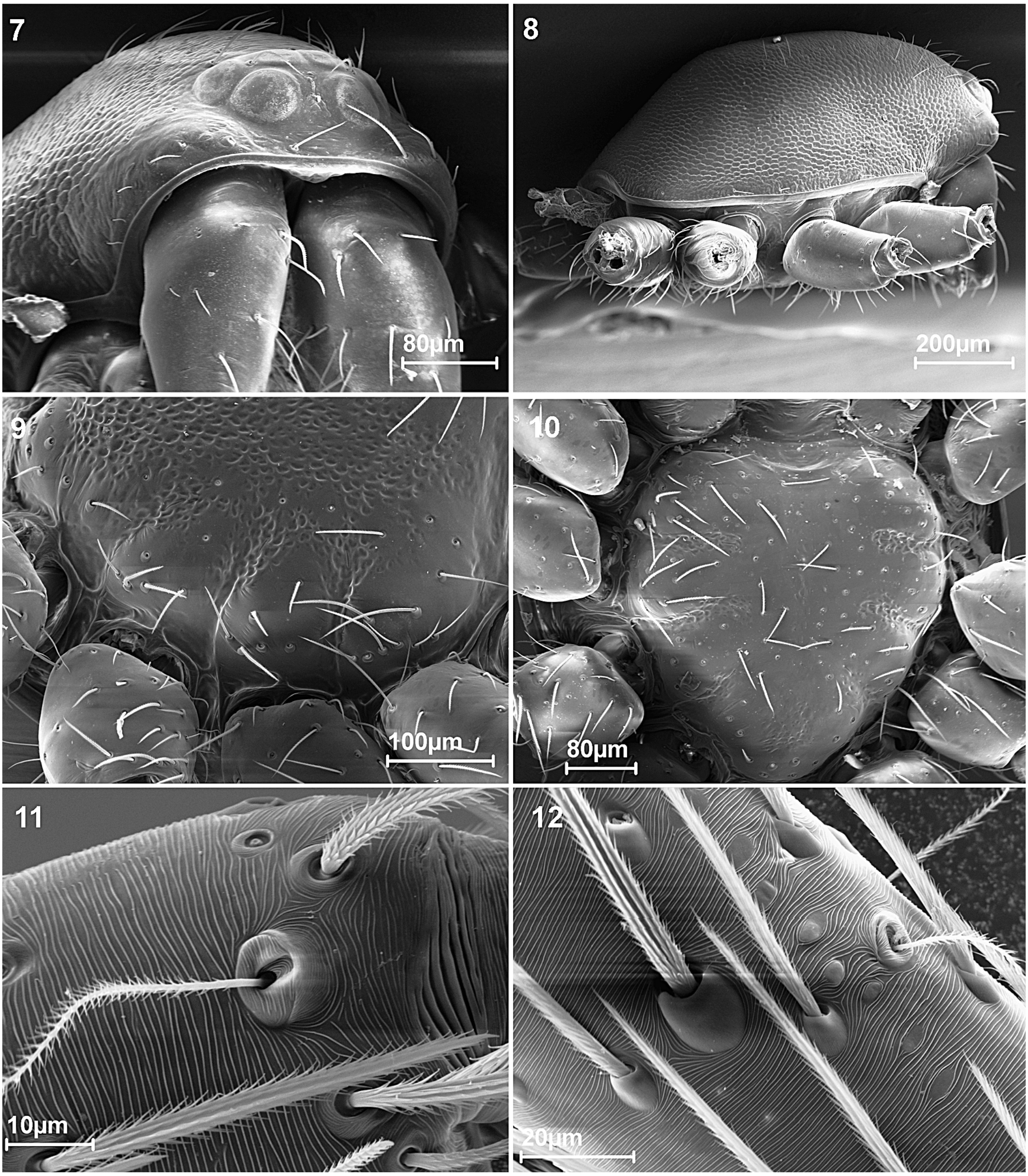
Male (PBI_OON 40507, figs. 1, 25, 33–46, 275, 290, 291): Total length 1.99. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange; abdomen soft portions pale white, abdominal scuta orange-brown. Sternal microsculpture covering almost entire surface, absent in front of coxae. Endites with retrolateral process hump shaped, not bent prolaterally; prolateral process stout, tip blunt, folded retrolaterally; median process not protruded (figs. 41, 275). Postepigastric scutum almost semicircular, covering about 2/3 of abdominal length. Palp: embolus short, tubular, slightly narrowed toward distal end; conduc-



Figs. 1–6. *Simlops* species. **1.** *S. pennai*, male cephalothorax, lateral view. **2.** *S. pennai*, female cephalothorax, dorsal view. **3.** *S. cachorro*, male, anterior portion of cephalothorax, lateral view. **4.** *S. platnicki*, male cephalothorax, anterior view. **5.** *S. platnicki*, female cephalothorax, dorsal view. **6.** *S. platnicki*, female eye region, anterior view.

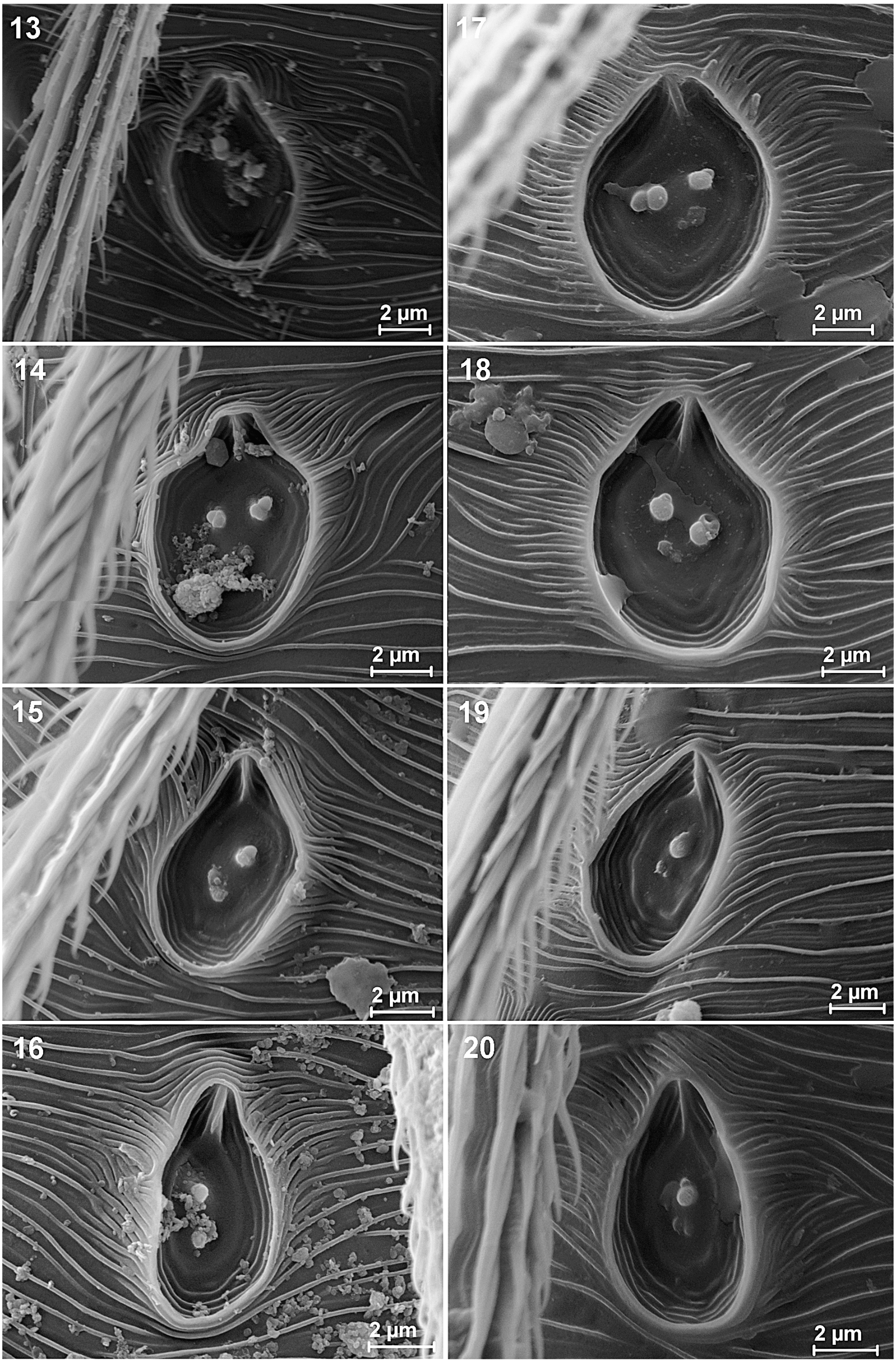
tor with basal squared process directed dorsally, translucent and lamellar toward distal end and bearing filamentous tip (figs. 38–40, 42–46, 290–291).

FEMALE (PBI_OON 40508, figs. 2, 29–32, 47–53, 320): Total length 2.18. Dorsal scutum absent. Epigastric furrow straight, not medially sclerotized, not connected laterally

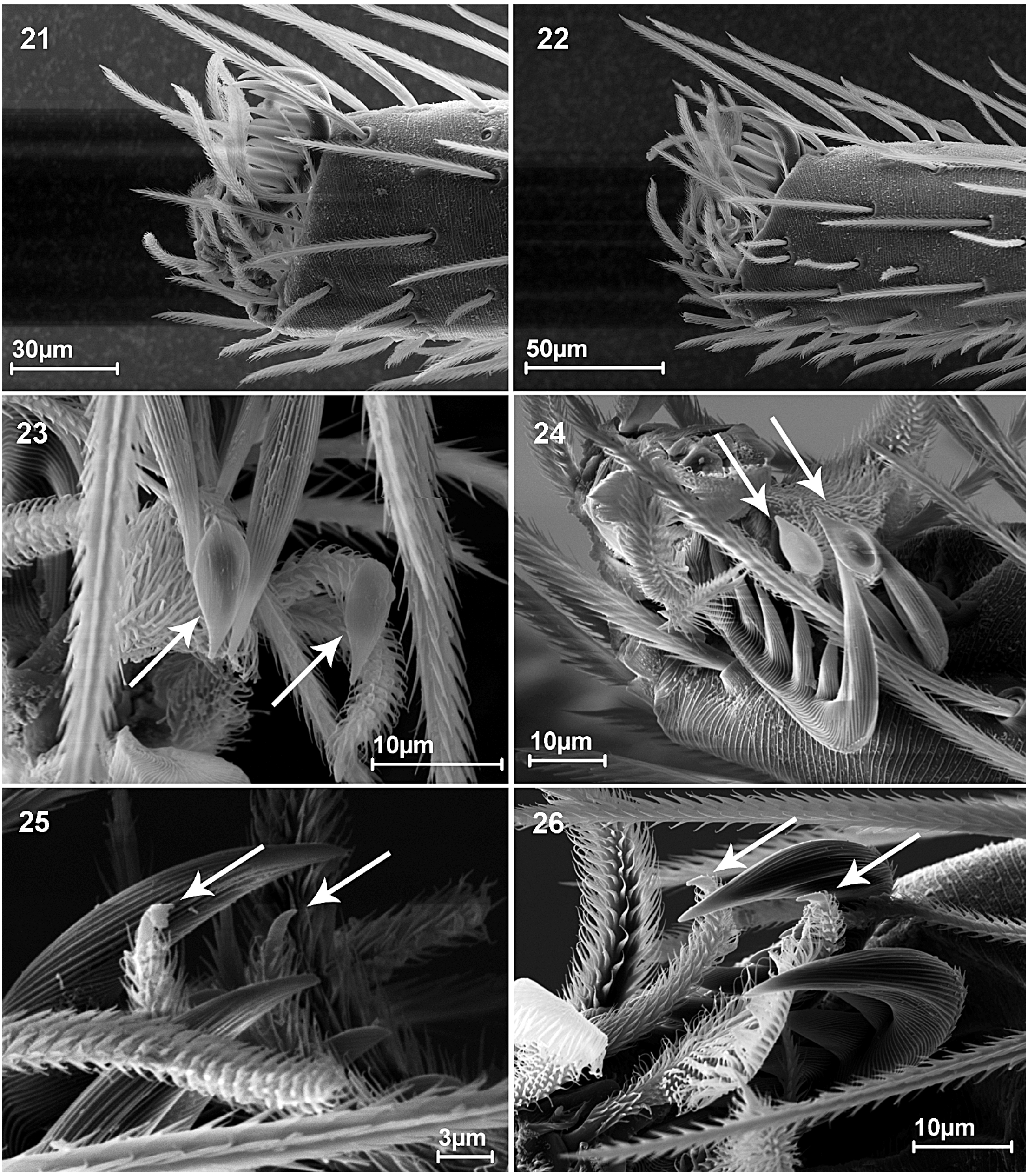


Figs. 7–12. *Simlops* species. **7.** *S. bodanus*, male cephalothorax, anterolateral view. **8.** Same, lateral view. **9.** *S. cachorro*, male sternum, lateroventral view. **10.** *S. platnicki*, male sternum, ventral view. **11.** *S. platnicki*, male leg, detail of trichobothrium base. **12.** *S. platnicki*, male leg tibia III, detail of trichobothrium and other cuticular organs.

to anterior spiracles; postepigastric scutum restricted to groove connecting posterior spiracles, slightly enlarged laterally around posterior spiracles, without discrete lateral sclerotizations. Genitalia with narrow posteromedian rod, slightly widened anteriorly; broad transverse bar, with medial subquadrate plate at epigastric furrow area and



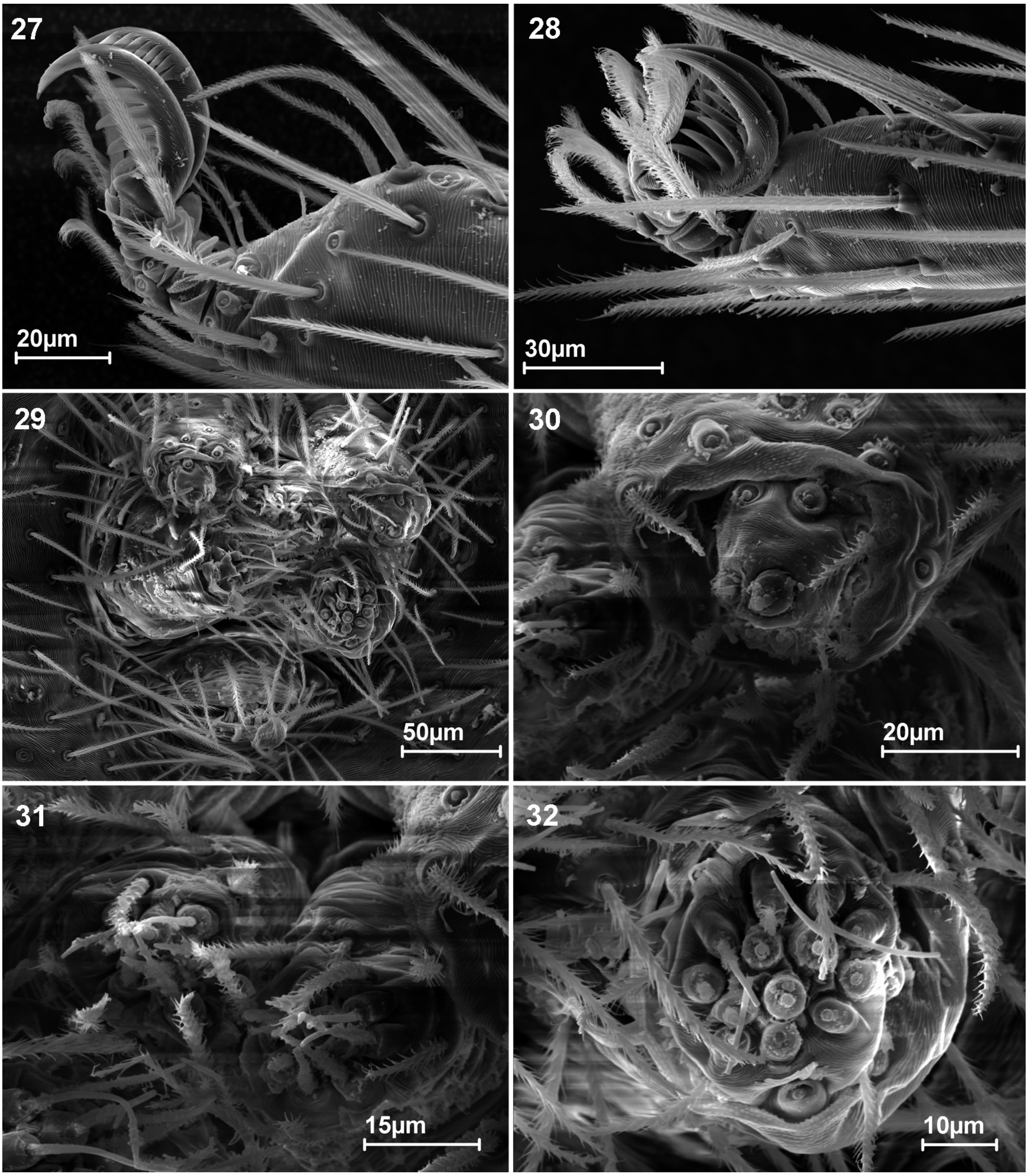
Figs. 13–20. *Simlops juruti*, tarsal organ. **13.** Male leg I. **14.** Male leg II. **15.** Male leg III. **16.** Male leg IV. **17.** Female leg I. **18.** Female leg II. **19.** Female leg III. **20.** Female leg IV.



Figs. 21–26. *Simlops* species, arrows pointing to setae with clawlike tips. **21.** *S. bodanus*, male tarsus I, lateral view. **22.** *S. bodanus*, male tarsus II, lateral view **23.** *S. bodanus*, male tarsus III, distal view **24.** *S. bodanus*, male tarsus IV, dorsal view **25.** *S. pennai*, male tarsus III. **26.** *S. juruti*, male tarsus IV.

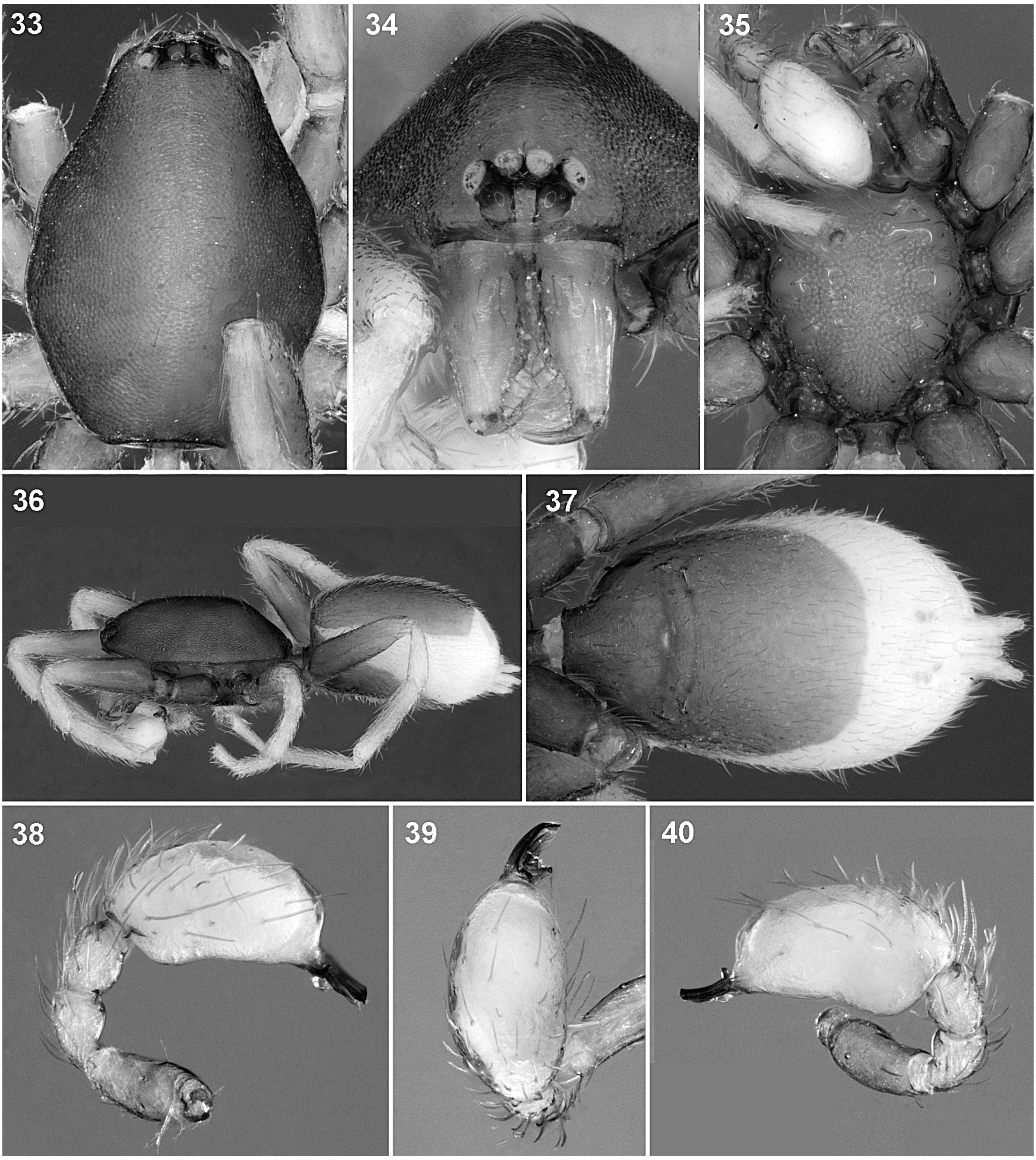
short, divergent, lateral apodemes (figs. 53, 320).

OTHER MATERIAL EXAMINED: **BRAZIL:** *Pará*: Melgaço, Estação Científica Ferreira Penna, Floresta Nacional de Caxiuanã (01°44′15.5″S 51°26′42.0″W), Oct. 22, 2003, 1♂ (MPEG 10282 PBI_OON 40511); May 25, 2003, 1♀ (MPEG 10294 PBI_OON



Figs. 27–32. *Simlops* species. **27.** *S. platnicki*, female tarsus, lateral view. III. **28.** *S. platnicki*, female tarsus IV, lateral view. **29.** *S. pennai*, female spinnerets, distal view **30.** *S. pennai*, female anterior lateral spinnerets, distal view. **31.** *S. pennai*, female posterior median spinnerets, distal view. **32.** *S. pennai*, female posterior lateral spinneret, distal view.

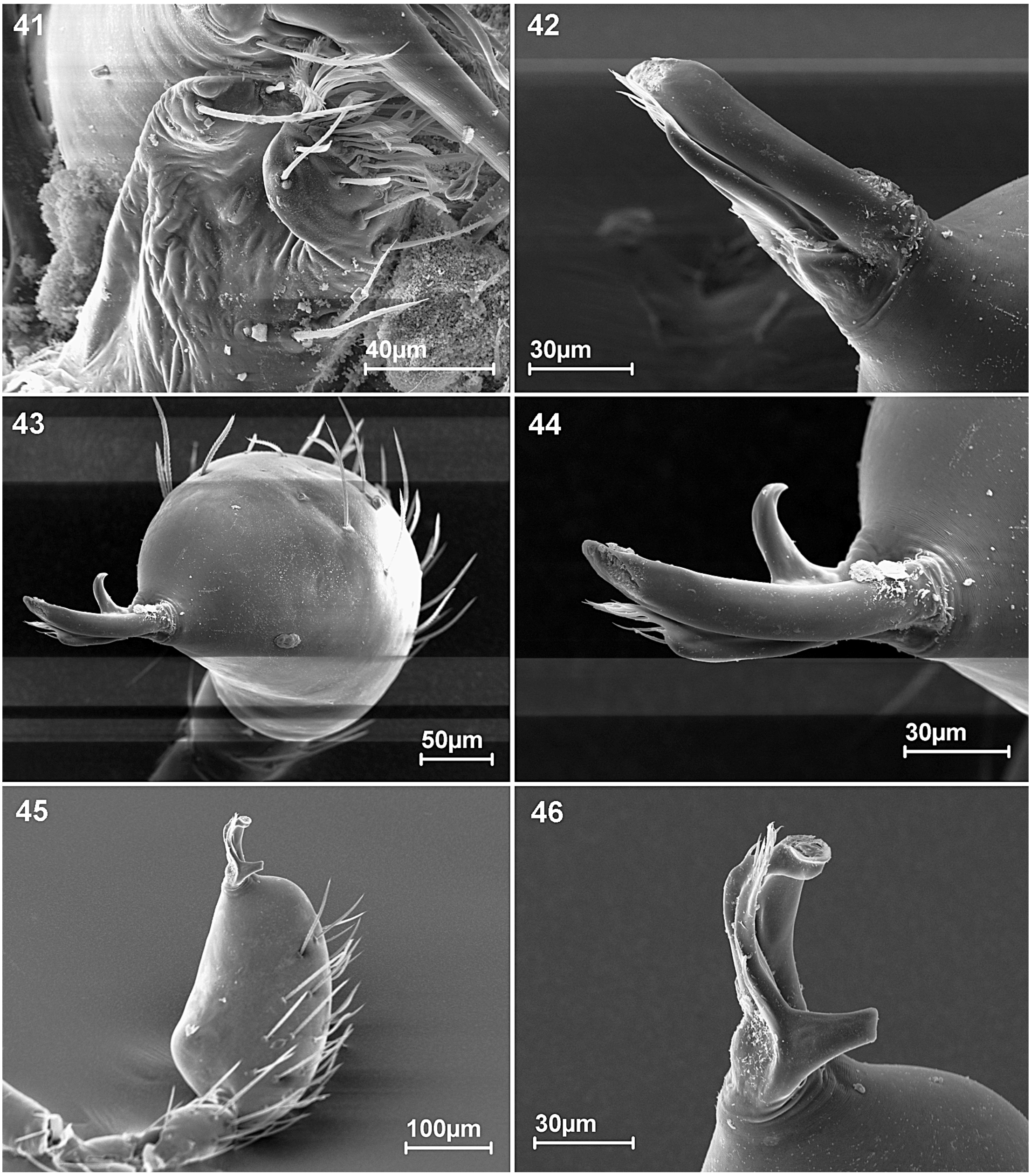
40512); Oct. 16, 2003, 1♂ (MPEG 10292 PBI_OON 40738); Oct. 19, 2003, 1♂ (MPEG 10283 PBI_OON 40739), all collected by J.A.P. Barreiros; Nov. 02, 2002 to Nov. 05, 2002, 1♀ (MPEG 19170 PBI_OON 40741); Oct. 24, 2003 to Nov. 03, 2003, 1♂ (AMNH PBI_OON 40742); Dec. 03, 2003, 1♂ (MPEG 19173 PBI_OON 40746); (Comuni-



Figs. 33–40. *Simlops pennai*, male. **33.** Cephalothorax, dorsal view. **34.** Same, anterior view. **35.** Same, ventral view. **36.** Lateral view. **37.** Abdomen, ventral view. **38.** Left palp, prolateral view. **39.** Same, dorsal view. **40.** Same, retrolateral view.

dade Caiçara, 1°46′44″S 51°25′34″W), Nov. 07, 2005 to Nov. 12, 2005, 1♂ (MPEG 19169 PBI_OON 40740); Oct. 21, 2003 to Oct. 31, 2003, 1♂ (IBSP 161822 PBI_OON 40743); Oct. 21, 2003 to Oct. 31, 2003, 1♂ (MPEG 19171 PBI_OON 40744); (Parcela LBA, 01°44′15.72″S 51°27′35.33″W), Dec. 03, 2003, 1♂ (MPEG 19172 PBI_OON 40745), all collected by J.A.P. Barreiros et al.

Distribution: Known only from the type locality.

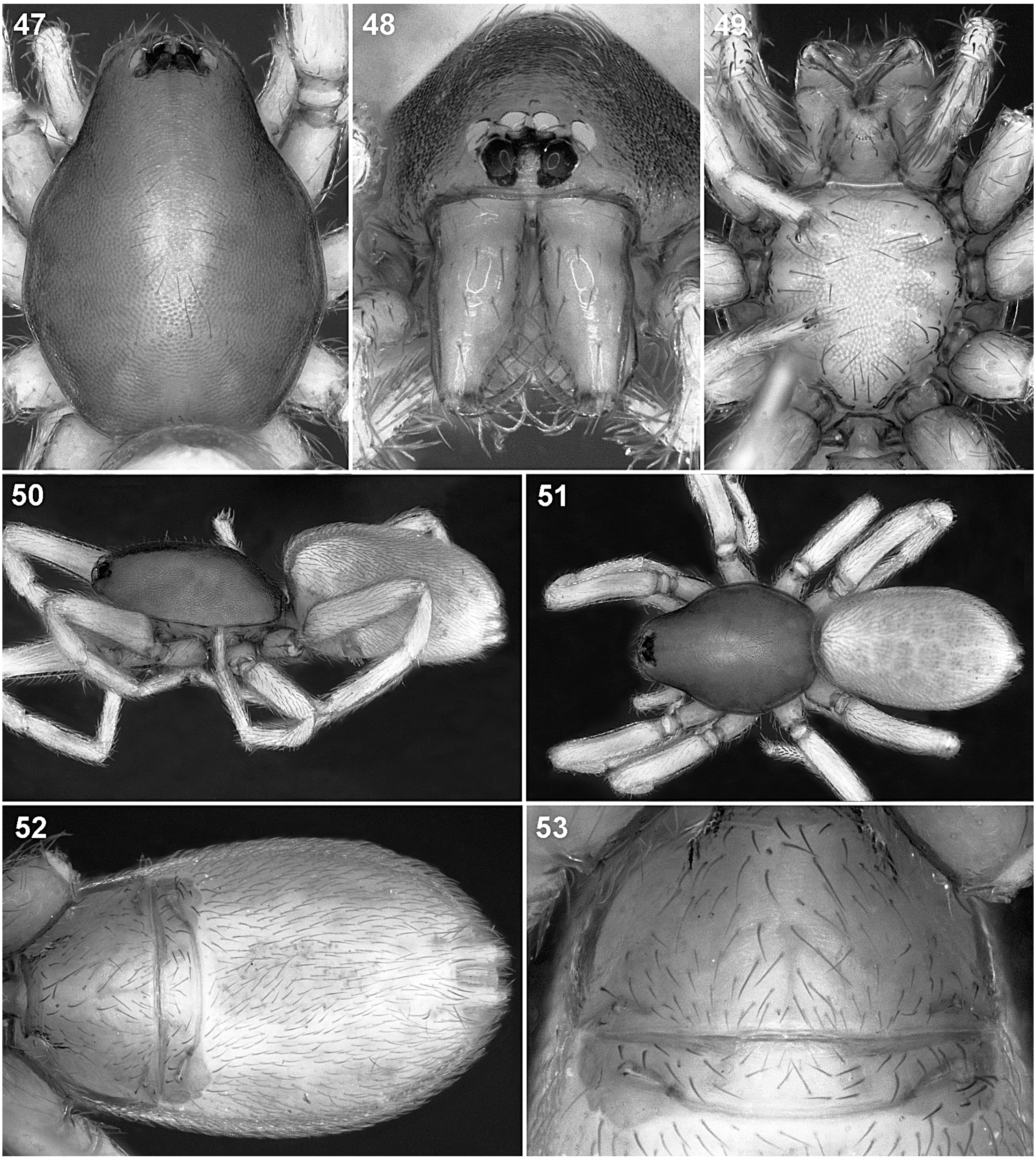


Figs. 41–46. *Simlops pennai*, male. **41.** Right endite, ventral view. **42.** Left palp, embolus, dorsal view. **43.** Left palp, prodistal view. **44.** Left palp, embolus, prolateral view. **45.** Right palp, retrolateral view. **46.** Right palp, embolus, retrolateral view.

Simlops miudo Ruiz, new species
Figures 54–61, 276, 292, 293

TYPE: Male holotype from Igarapé Mutum, Juruti, Pará, Brazil 2°33′18″S 56°13′22.4″W), June 03, 2007, to June 10, 2007, D.F. Candiani and N.F. Lo-Man-Hung (MPEG 19163 PBI_OON 40503).

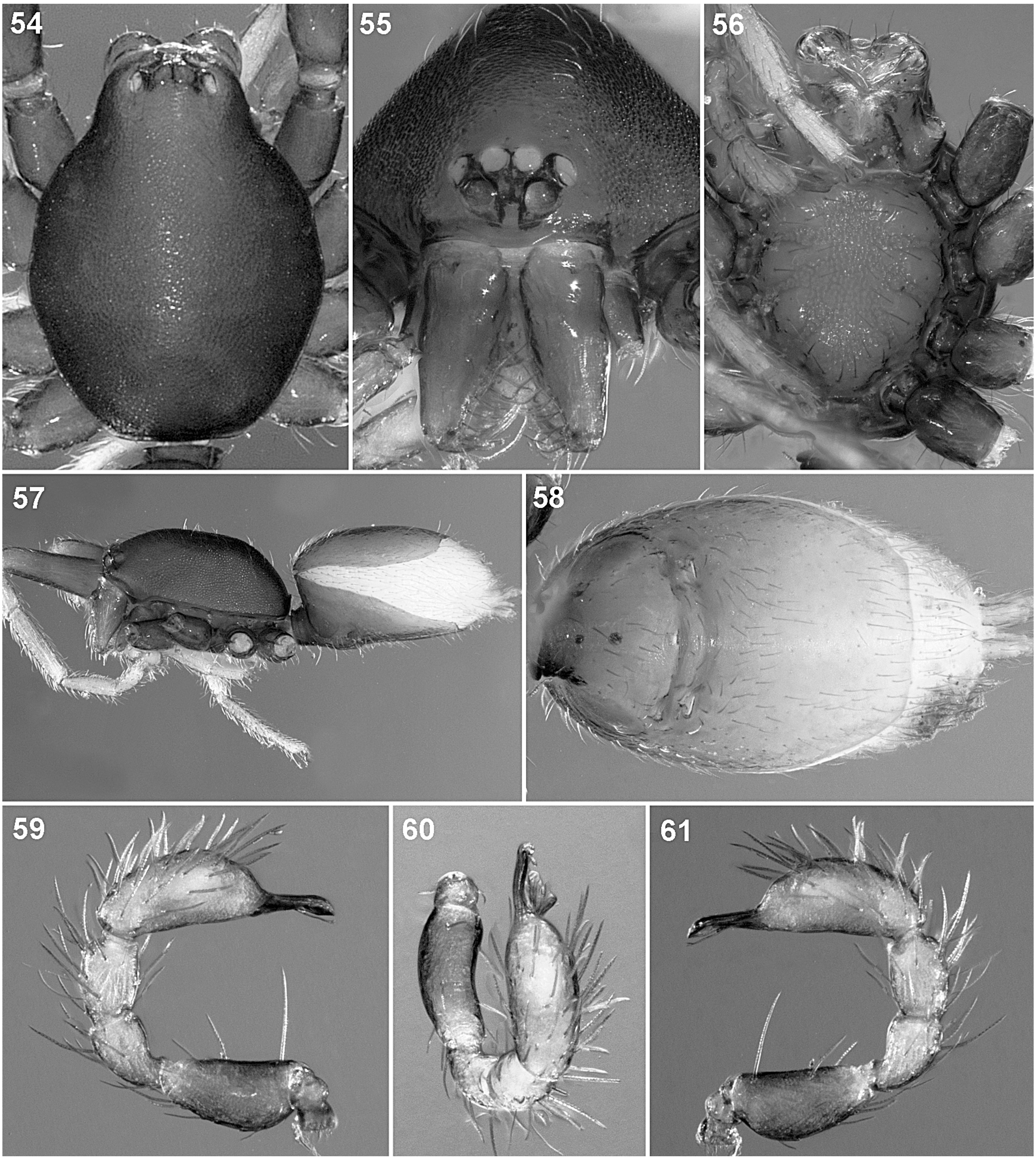
ETYMOLOGY: The specific name is in honor of ichthyologist Luciano Fogaça de



Figs. 47–53. *Simlops pennai*, female. **47.** Cephalothorax, dorsal view. **48.** Same, anterior view. **49.** Same, ventral view. **50.** Lateral view. **51.** Dorsal view. **52.** Abdomen, ventral view. **53.** Epigyne, ventral view.

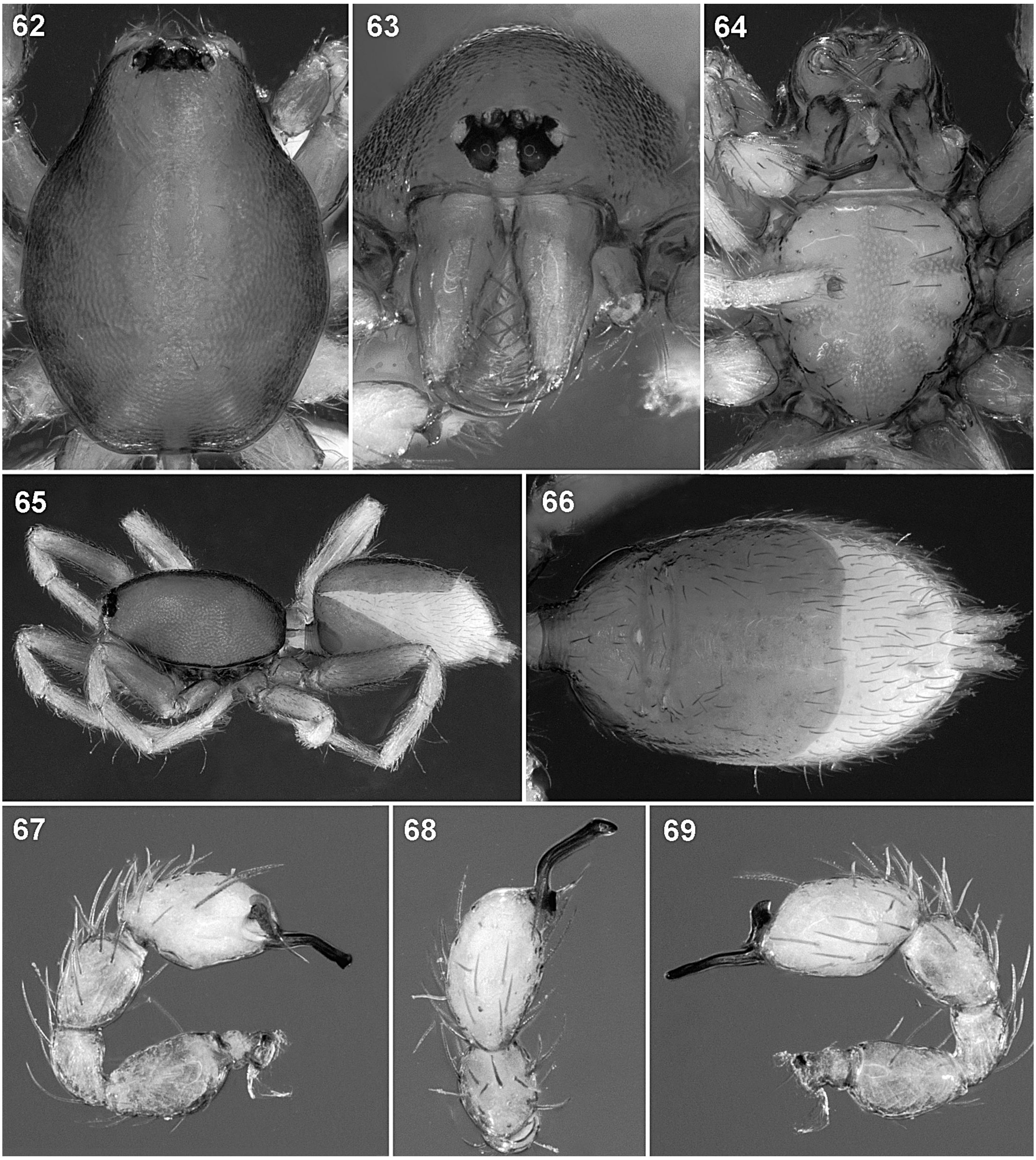
Assis Montag, nicknamed Miúdo, which in Brazilian Portuguese means "small." Ironically, both Luciano and the representatives of this species are among the largest specimens of their respective genera.

DIAGNOSIS: Males of *Simlops miudo* differs from those of *S. machadoi* and *S. similis* by the basal expansion of conductor directed dorsally and from those of *S. pennai* by the thin, filiform distal third of conductor (figs. 292, 293).



Figs. 54–61. *Simlops miudo*, male. **54.** Cephalothorax, dorsal view. **55.** Same, anterior view. **56.** Same, ventral view. **57.** Lateral view. **58.** Abdomen, ventral view. **59.** Left palp, prolateral view. **60.** Same, dorsal view. **61.** Same, retrolateral view.

Male (PBI_OON 40503, figs. 54–61, 276, 292, 293): Total length 2.10. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions pale white, abdominal scuta orange-brown. Sternal microsculpture almost covering entire surface, absent in front of coxae. Endites with retrolateral process indistinct from median process; prolateral process large,



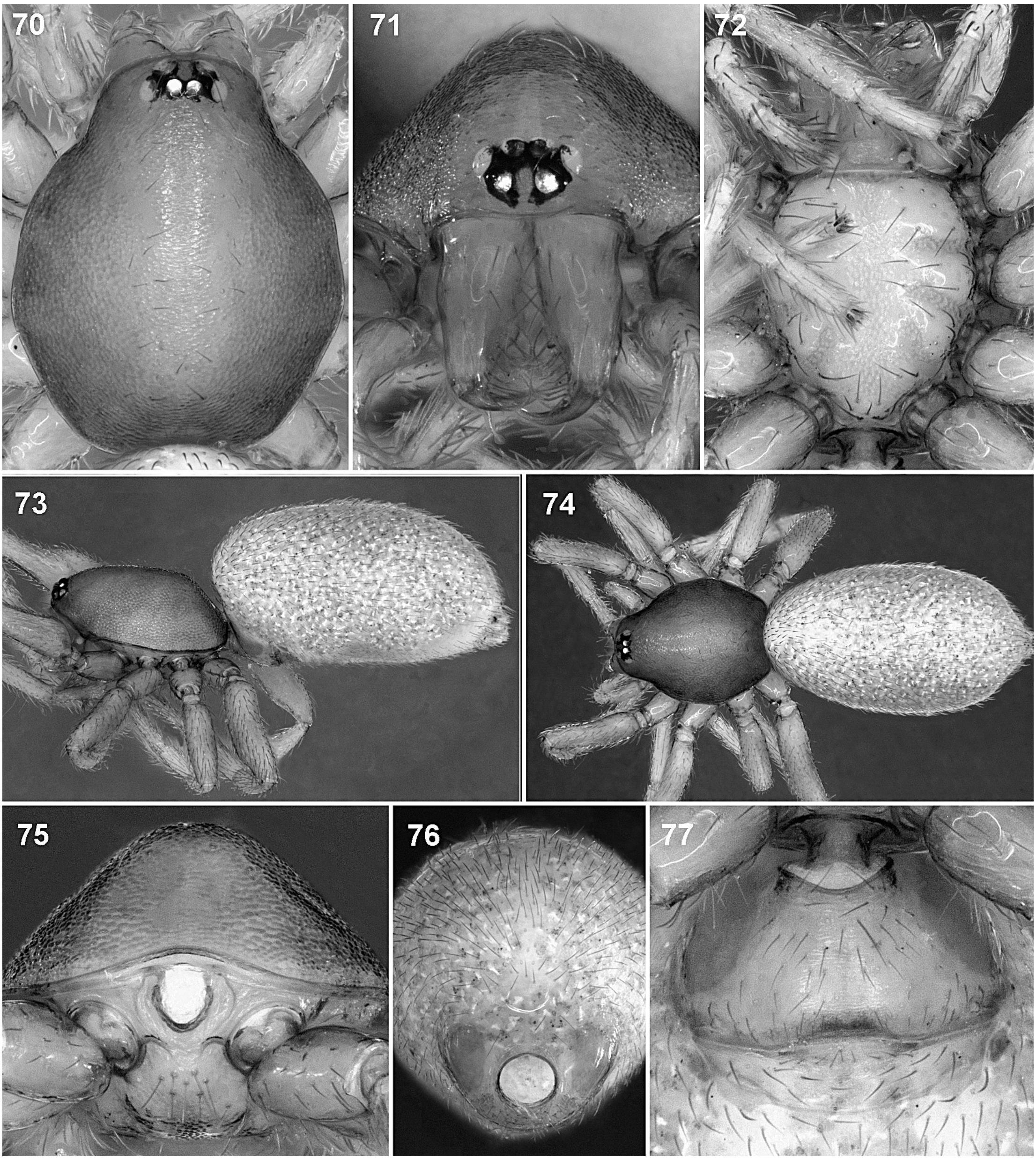
Figs. 62–69. *Simlops machadoi*, male. **62.** Cephalothorax, dorsal view. **63.** Same, anterior view. **64.** Same, ventral view. **65.** Lateral view. **66.** Abdomen, ventral view. **67.** Left palp, prolateral view. **68.** Same, dorsal view. **69.** Same, retrolateral view.

stout, distal third laminar, slightly bent retrolaterally (fig. 276). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus almost straight, narrow, with small distal translucent process directed prolaterally; conductor thin, filamentous, with large basal triangular process directed dorsally (figs. 59–61, 292–293).

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality.

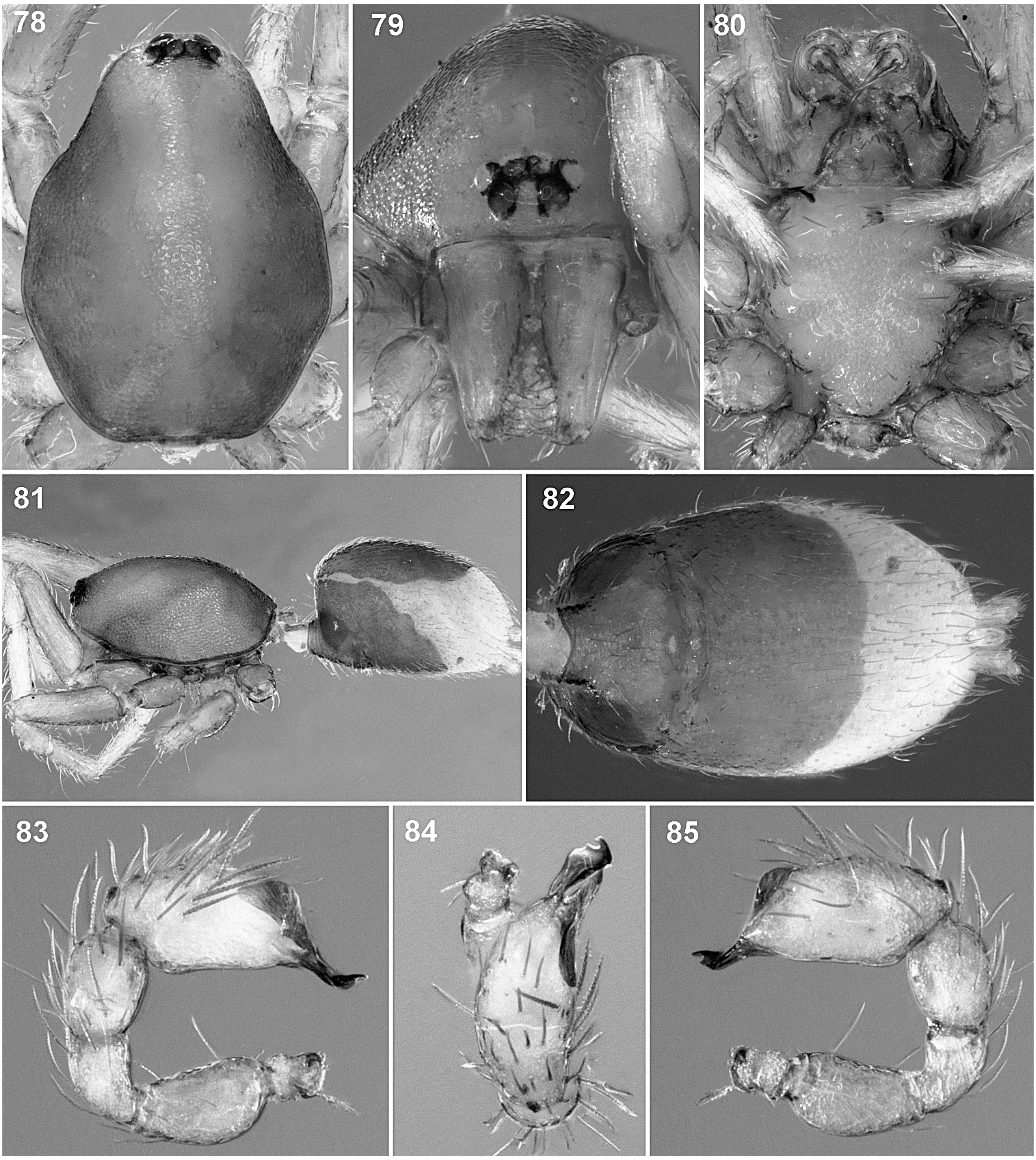


Figs. 70–77. *Simlops machadoi*, female. **70.** Cephalothorax, dorsal view. **71.** Same, anterior view. **72.** Same, ventral view. **73.** Lateral view. **74.** Dorsal view. **75.** Cephalothorax, posterior view. **76.** Abdomen, anterior view. **77.** Epigyne, ventral view.

Simlops machadoi Ott, new species

Figures 62–77, 277, 294, 295, 321

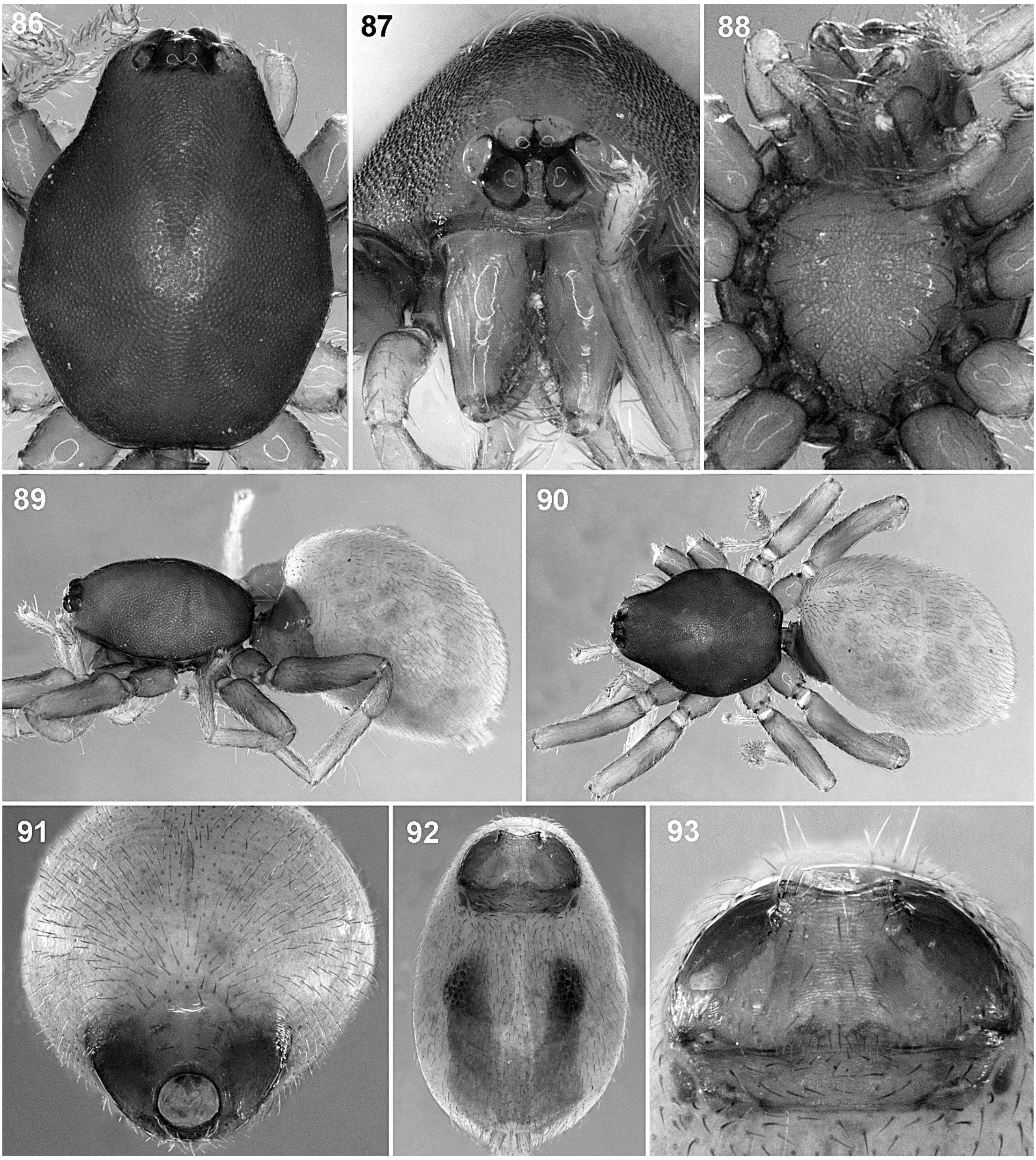
TYPES: Male holotype from Fazenda Experimental da UFAM, km 38 of Road BR174, Manaus, Amazonas, Brazil (2°39′21.23″S 60°4′31.25″W), Sept. 07, 2008, B. Machado col. (MPEG 19164 PBI_OON 40494); female paratype from same locality, June 17, 2009, B. Machado col. (MPEG 19165 PBI_OON 40516).



Figs. 78–85. *Simlops similis*, male. **78.** Cephalothorax, dorsal view. **79.** Same, anterior view. **80.** Same, ventral view. **81.** Lateral view. **82.** Abdomen, ventral view. **83.** Left palp, prolateral view. **84.** Same, dorsal view. **85.** Same, retrolateral view.

ETYMOLOGY: The specific name is a patronym in honor of Bruno Machado, the collector of the types of this species as well as other interesting goblin spiders in Manaus neighborhood.

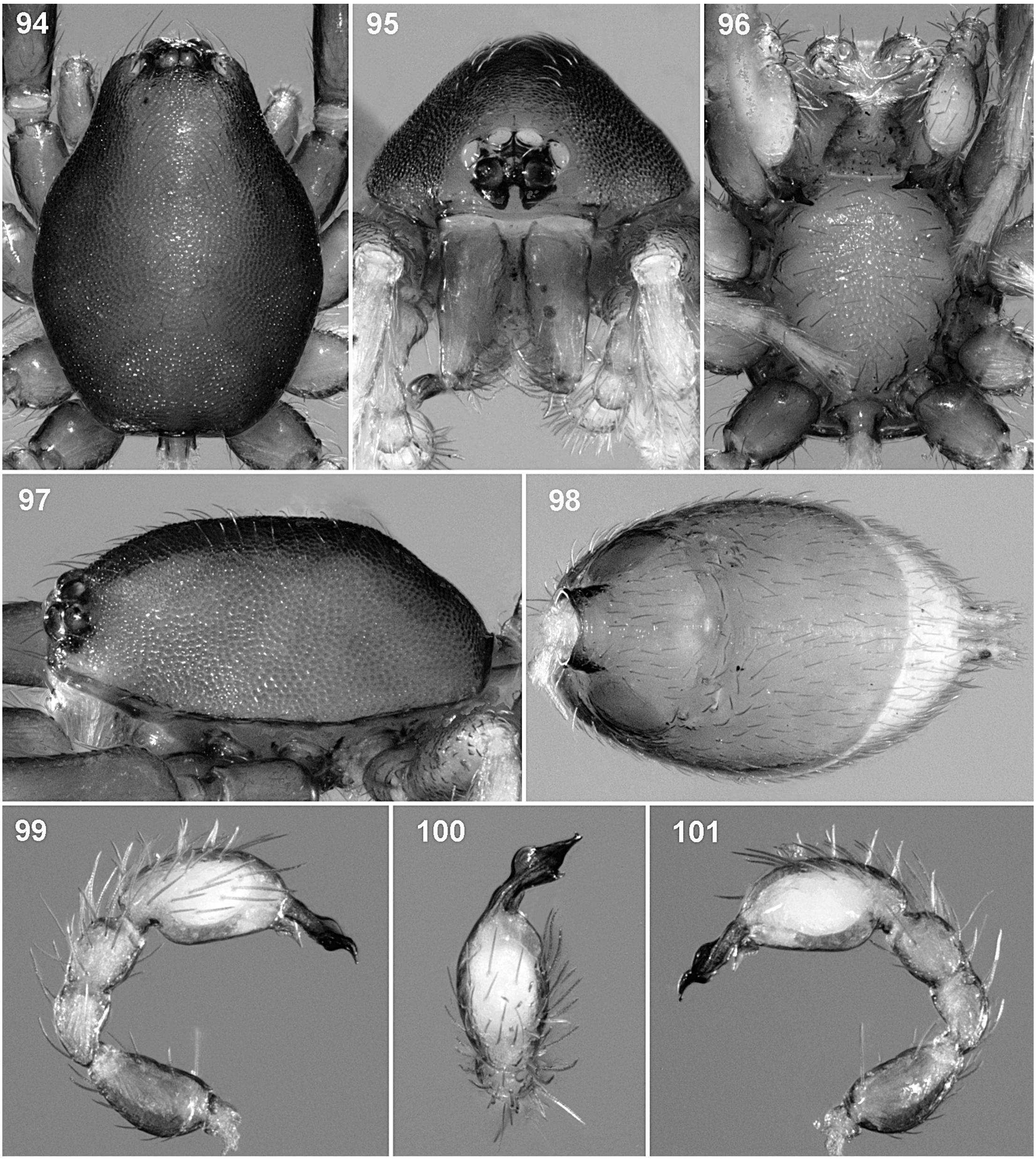
DIAGNOSIS: Males of *Simlops machadoi* differs from those of *S. pennai* and *S. miudo* by the basal expansion of conductor directed posteriorly and from those of *S. similis* by the short conductor, smaller than the embolus



Figs. 86–93. *Simlops similis*, female. **86.** Cephalothorax, dorsal view. **87.** Same, anterior view. **88.** Same, ventral view. **89.** Lateral view. **90.** Dorsal view. **91.** Abdomen, anterior view. **92.** Same, ventral view. **93.** Epigyne, ventral view.

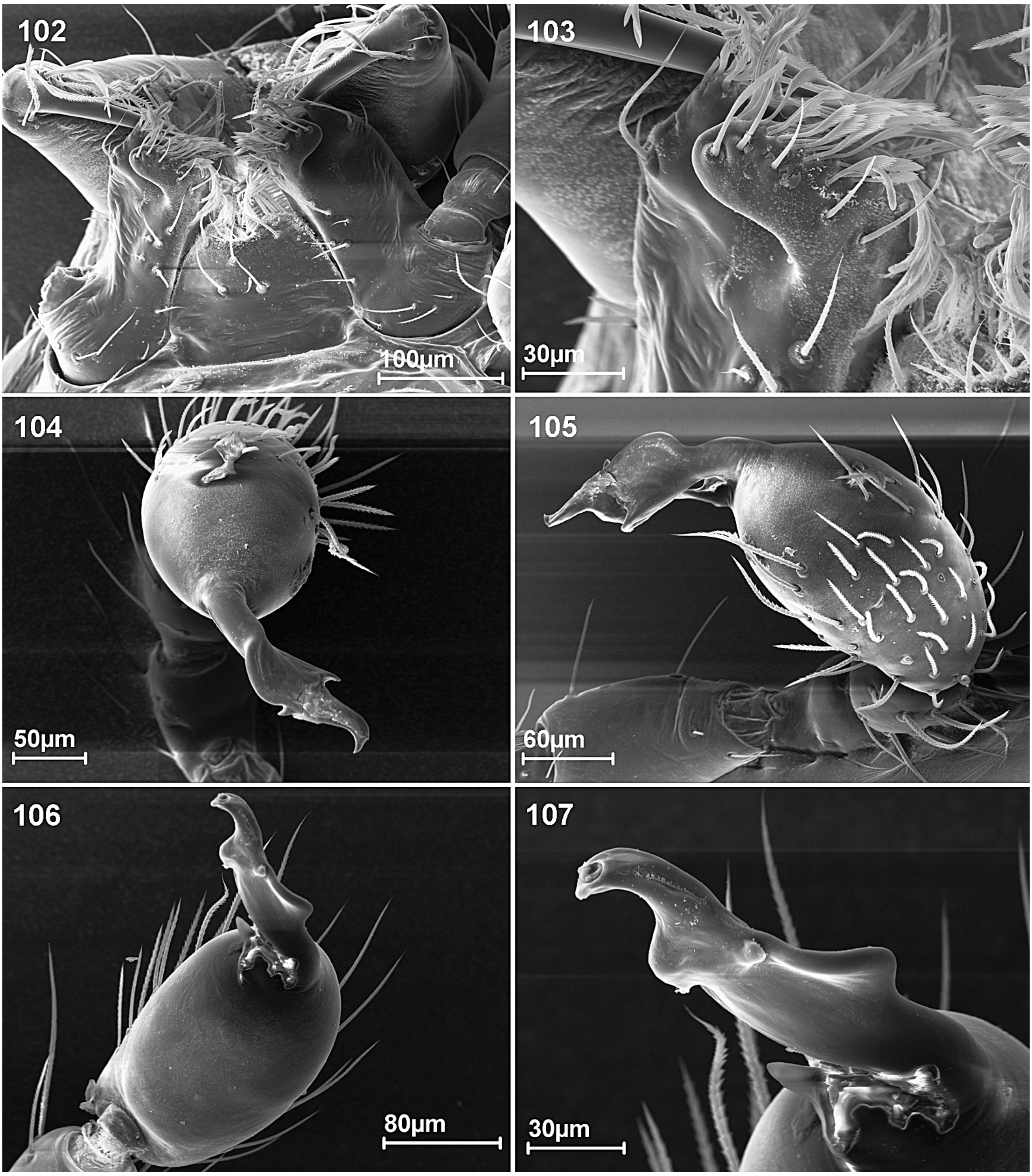
(figs. 294, 295). Females can be readily distinguished from those of *S. pennai* by the epigastric furrow with a median sclerotization (fig. 77) and by the convergent apodemes; and from those of *S. similis* by the arched transverse bar and much smaller and thin anteromedian rod (fig. 321).

Male (PBI_OON_0040494, figs. 62–69, 277, 294, 295): Total length 1.76. Carapace dark red-brown sternum and mouthparts



Figs. 94–101. *Simlops juruti*, male. **94.** Cephalothorax, dorsal view. **95.** Same, anterior view. **96.** Same, ventral view. **97.** Same, lateral view. **98.** Abdomen, ventral view. **99.** Left palp, prolateral view. **100.** Same, dorsal view. **101.** Same, retrolateral view.

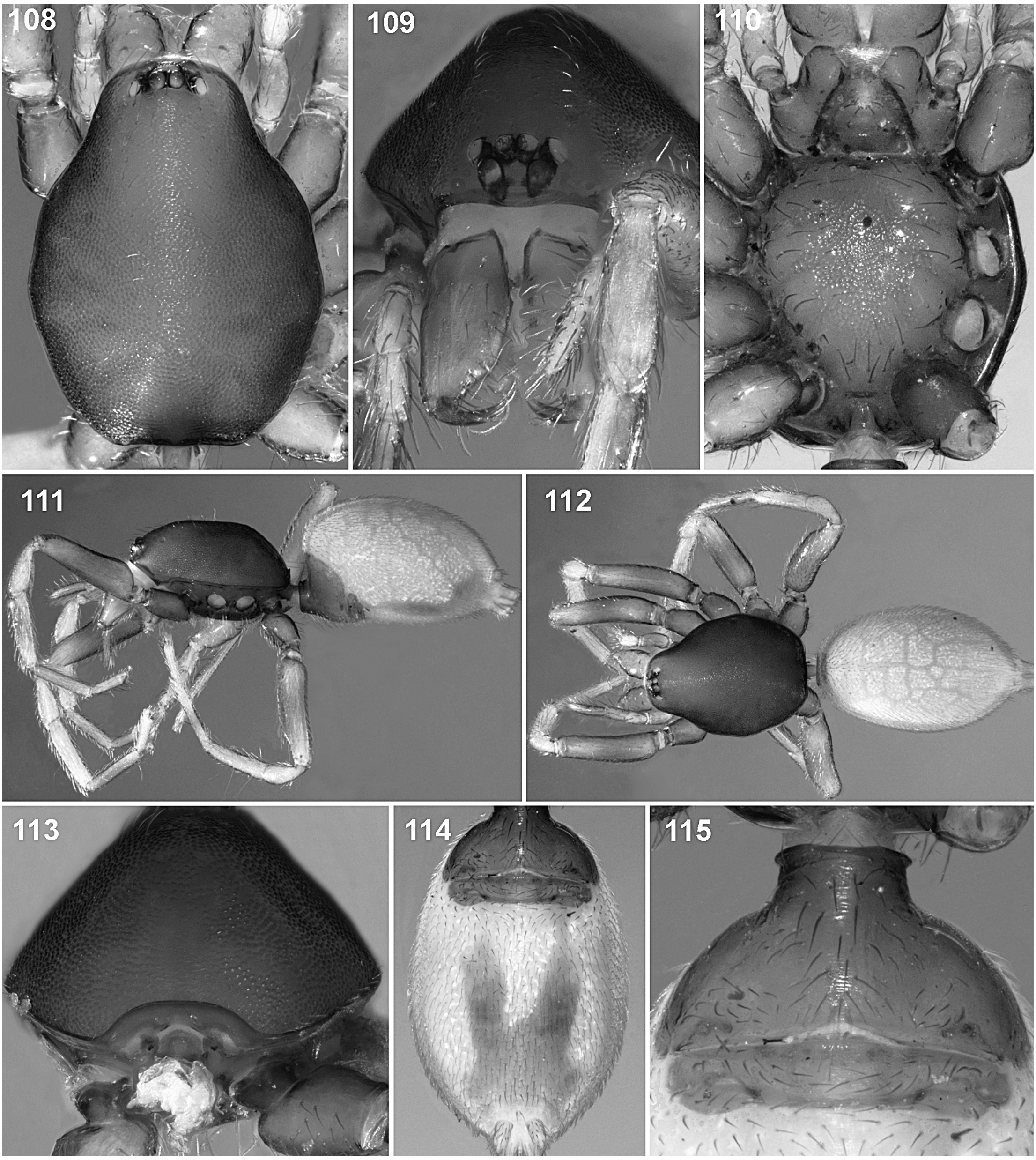
orange-brown; legs pale orange, without color pattern; abdomen soft portions pale white, abdominal scuta orange-brown. Sternal microsculpture medially and in furrows. Endites with retrolateral process short, slightly curved; prolateral process laminar, quadrangular, slightly curved retrolaterally, median process not protruded (fig. 277). Postepigastric scutum almost semicircular, covering about 2/3 of abdominal length. Palp: embolus narrow, long, curved prolaterally, with blunt tip; conductor originating



Figs. 102–107. *Simlops juruti*, male. **102.** Endites, ventral view. **103.** Detail of apex of endite, ventral view. **104.** Right palp, dorsodistal view. **105.** Right palp, prolateral view. **106.** Left palp, ventrodistal view. **107.** Left palp, embolus, prolateral view.

at prolateral embolic base, with needlelike anteriorly directed sclerite and a small, retrodorsally projected, sclerotized lamella (figs. 67–69, 294, 295).

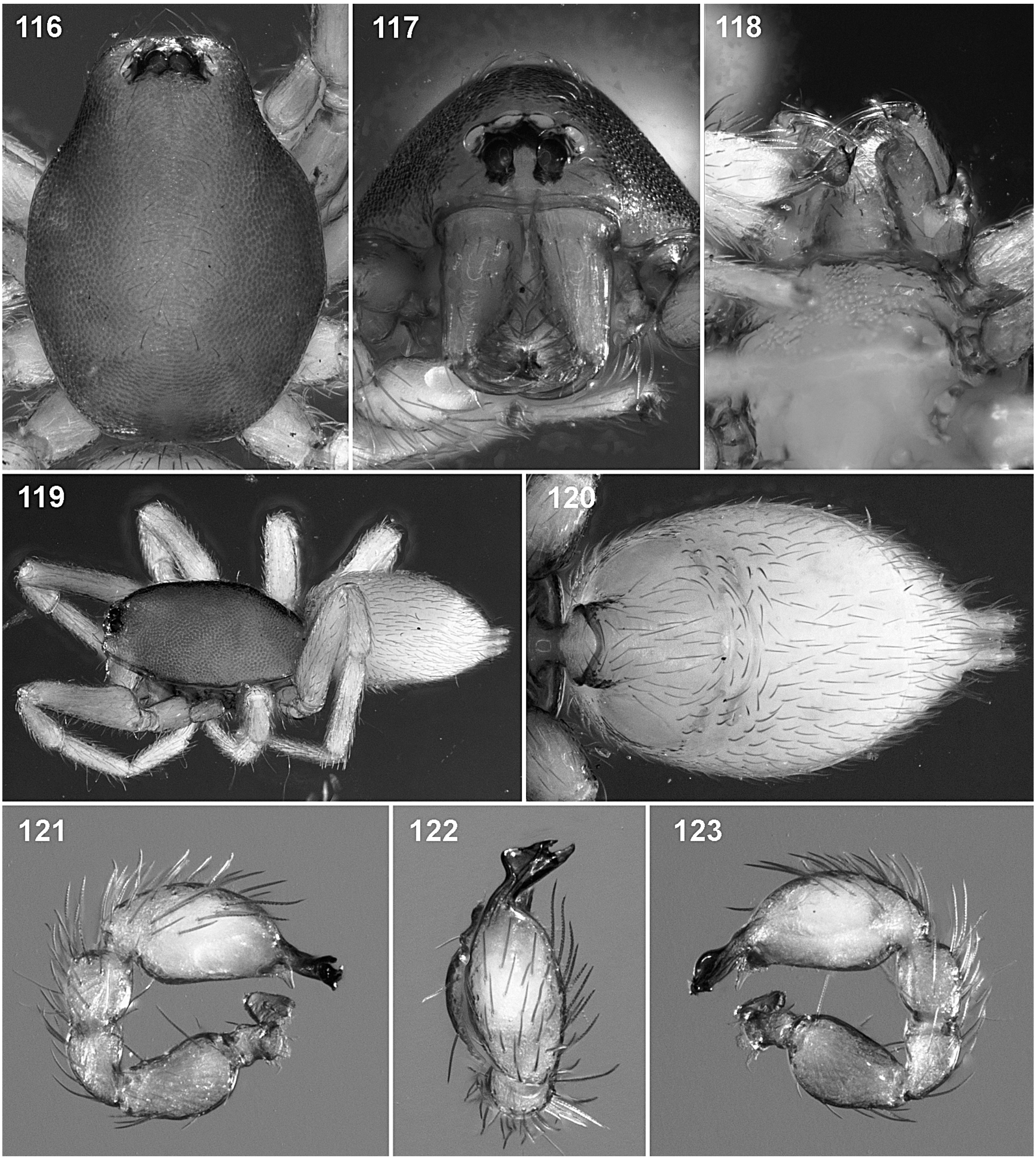
FEMALE (PBI_OON 40516, figs. 70–77, 321): Total length 2.23. Dorsal scutum absent. Epigastric scutum weakly sclerotized. Epigastric furrow medially procurved, medi-



Figs. 108–115. *Simlops juruti*, female. **108.** Cephalothorax, dorsal view. **109.** Same, anterior view. **110.** Same, ventral view. **111.** Lateral view. **112.** Dorsal view. **113.** Cephalothorax, posterior view. **114.** Abdomen, ventral view. **115.** Epigyne, ventral view.

ally sclerotized, connected laterally to anterior spiracles; postepigastric scutum restricted to groove connecting posterior spiracles, not enlarged laterally around posterior spiracles, with discrete lateral sclerotizations. Genitalia with thin posteromedian rod, triangular anteriorly; broad, procurved transverse bar, without medial plate at epigastric furrow area and convergent lateral apodemes (figs. 77, 321).

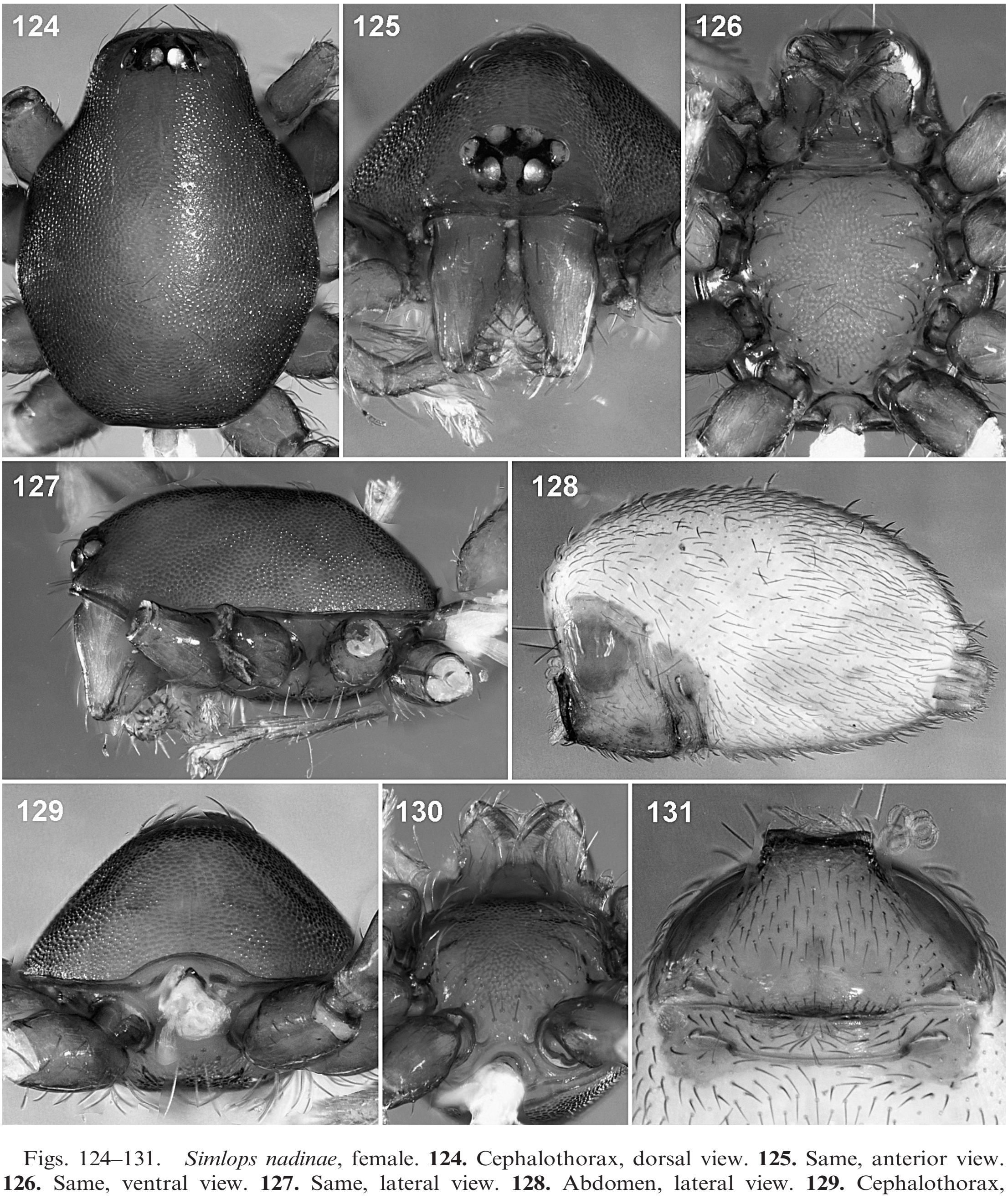
OTHER MATERIAL EXAMINED: **BRAZIL:** *Amazonas:* Manaus, Fazenda Experimental



Figs. 116–123. *Simlops nadinae*, male. **116.** Cephalothorax, dorsal view. **117.** Same, anterior view. **118.** Same, ventral view. **119.** Lateral view. **120.** Abdomen, ventral view. **121.** Left palp, prolateral view. **122.** Same, dorsal view. **123.** Same, retrolateral view.

da UFAM, km 38 of Road BR174 (2°39′21.23″S 60°4′31.25″W), June 23, 2009, B. Machado, 1♂ (IBSP 161821 PBI_OON 40499); June 17, 2009, B. Machado, 1♀ (IBSP 161820 PBI_OON 40515); June 18, 2009, B. Machado, 1♂ (MCN PBI_OON 40567); 1♀ (MCN PBI_OON 40567); Reserva Florestal Adolpho Ducke (2°55′35″S 59°56′25″W), June 14, 2005, S.M. Ketelhut et al., 1♂ (INPA 5819 PBI_OON 40498).

DISTRIBUTION: Known only from the vicinity of Manaus, Central Amazonia.



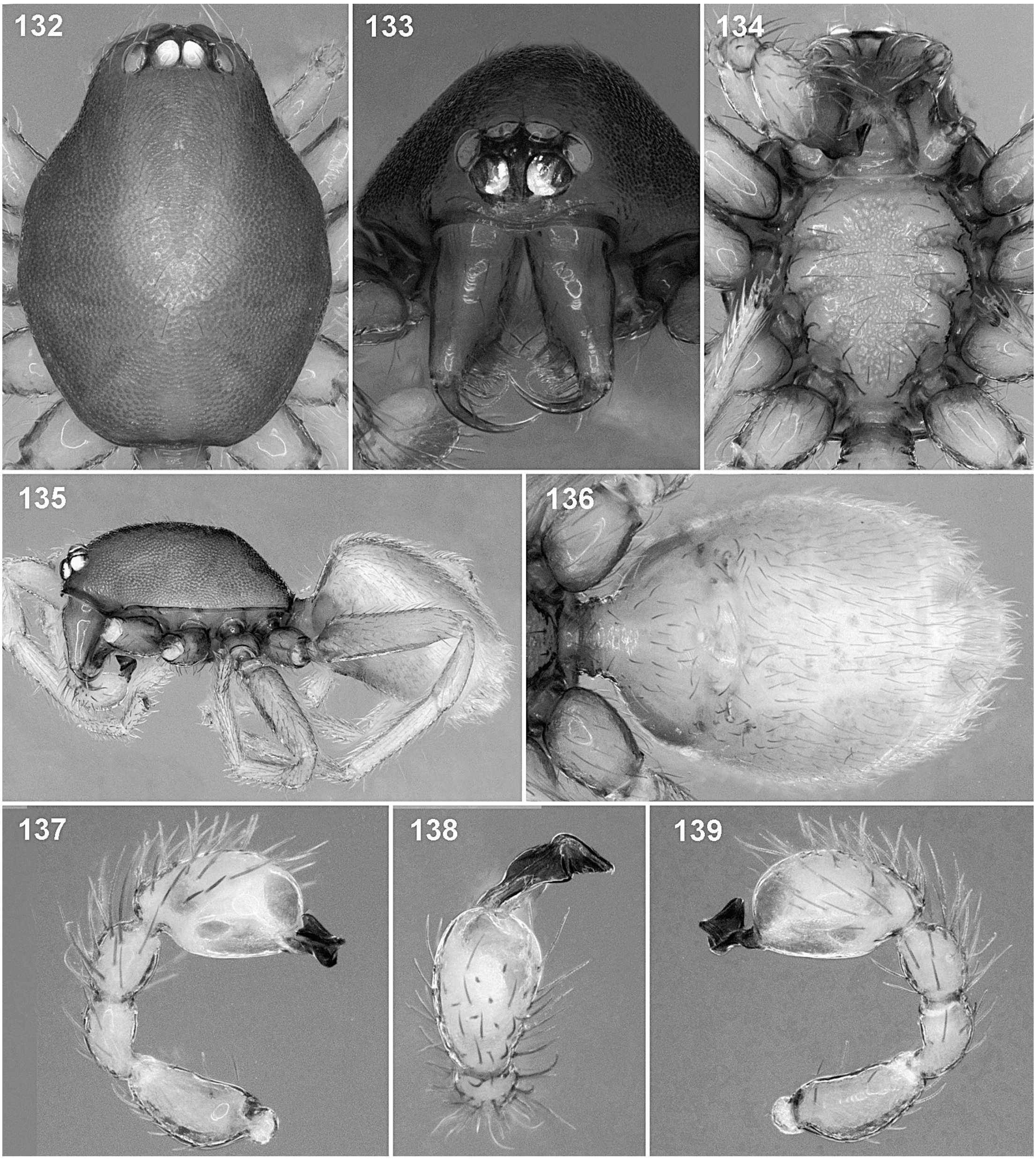
Figs. 124–131. *Simlops nadinae*, female. **124.** Cephalothorax, dorsal view. **125.** Same, anterior view. **126.** Same, ventral view. **127.** Same, lateral view. **128.** Abdomen, lateral view. **129.** Cephalothorax, posterior view. **130.** Same, posteroventral view. **131.** Epigyne, ventral view.

Simlops similis Ott, new species

Figures 78–93, 278, 296, 297, 322

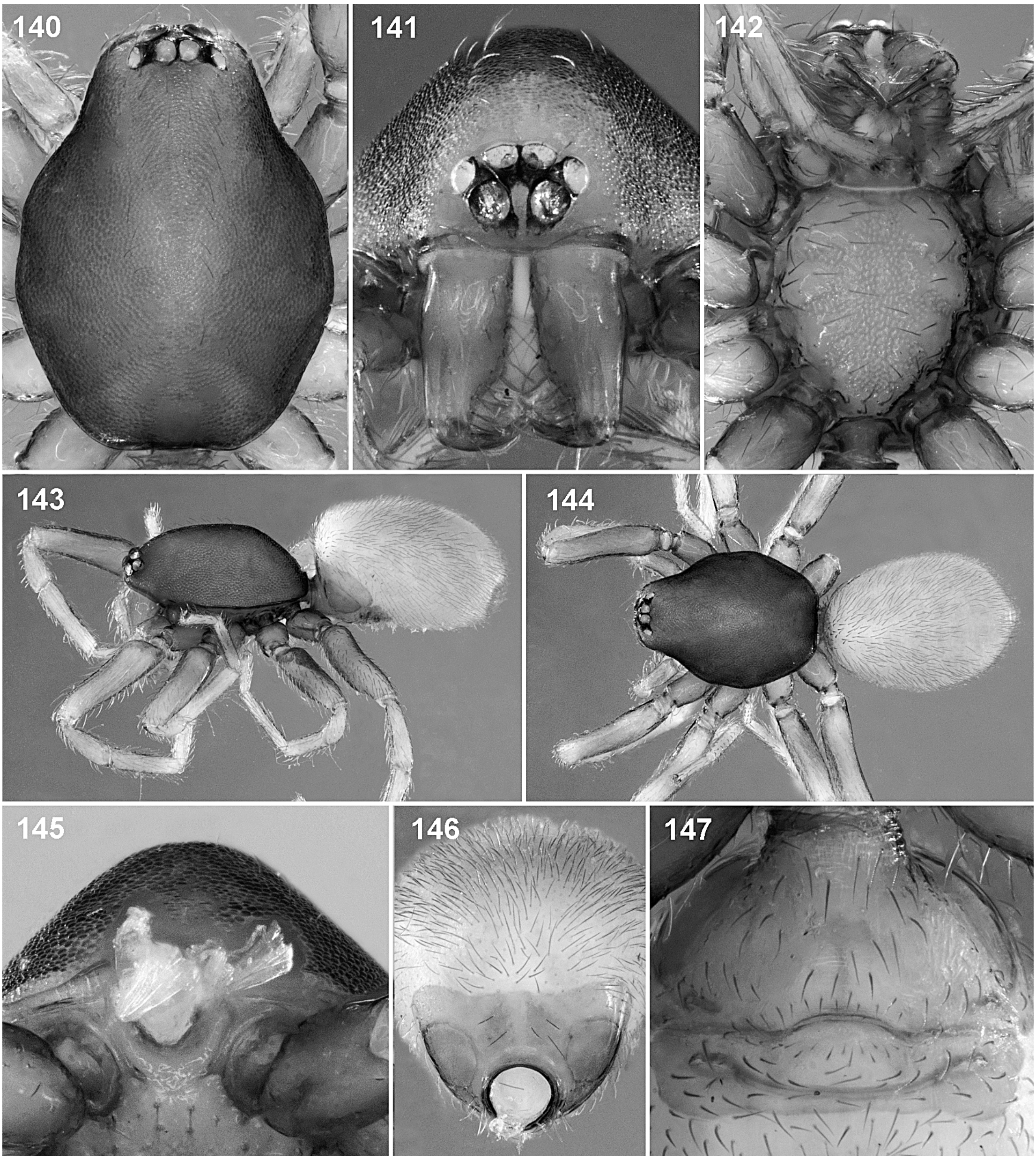
TYPES: Male holotype and female paratype from Embrapa, Manaus, Amazonas, Brasil (2°53′33.26″S 59°58′17.02″W), Mar. 07, 2001, H. Höfer col. (INPA PBI_OON 40492; PBI_OON 40519).

ETYMOLOGY: The specific name is a Latin adjective meaning ‘‘similar,’’ in reference to its resemblance to *Simlops machadoi*.



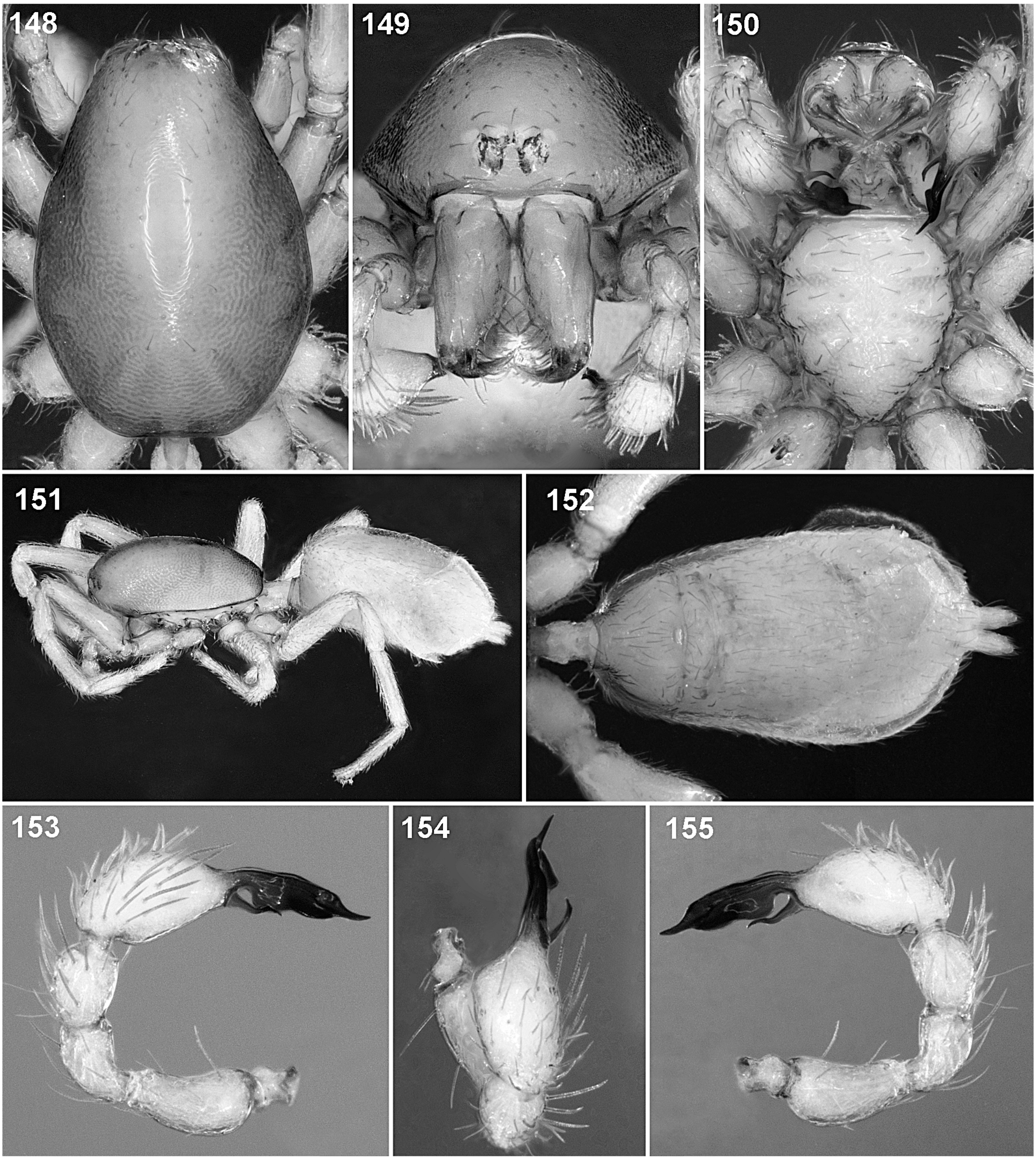
Figs. 132–139. *Simlops campinarana*, male. **132.** Cephalothorax, dorsal view. **133.** Same, anterior view. **134.** Same, ventral view. **135.** Lateral view. **136.** Abdomen, ventral view. **137.** Left palp, prolateral view. **138.** Same, dorsal view. **139.** Same, retrolateral view.

DIAGNOSIS: Males of *Simlops similis* differs from those of *S. pennai* and *S. miudo* by the basal expansion of conductor directed posteriorly and from those of *S. machadoi* by the larger conductor, similarly sized to embolus (figs. 296, 297). Females can be distinguished from those of *S. pennai* by the epigastric furrow with a median sclerotization (fig. 93) and by the convergent apodemes; and from those of *S. machadoi* by the M-shaped transverse bar and much larger and thick anteromedian rod (fig. 322).



Figs. 140–147. *Simlops campinarana*, female. **140.** Cephalothorax, dorsal view. **141.** Same, anterior view. **142.** Same, ventral view. **143.** Lateral view. **144.** Dorsal view. **145.** Cephalothorax, posterior view. **146.** Abdomen, anterior view. **147.** Epigyne, ventral view.

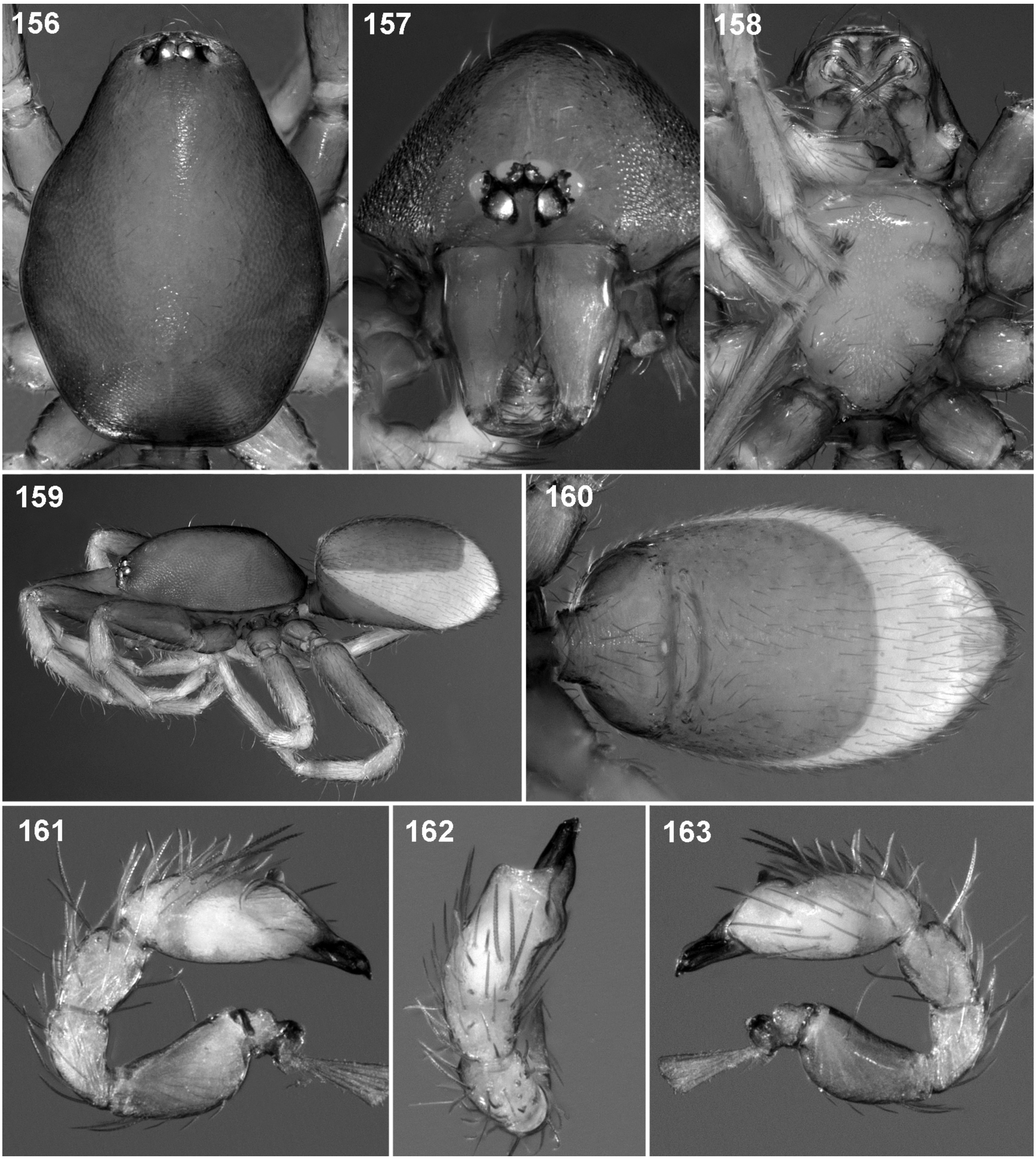
MALE (PBI_OON_40492, figs. 78–85, 278, 296, 297): Total length 1.70. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions pale white, abdominal scuta orange-brown. Sternal microsculpture covering almost entire surface, absent in front of coxae. Endites with retrolateral process short, curved; prolateral process laminar, slightly curved retrolaterally, median process not protruded (fig. 278). Postepigastric scutum almost semi-



Figs. 148–155. *Simlops bandeirante*, male. **148.** Cephalothorax, dorsal view. **149.** Same, anterior view. **150.** Same, ventral view. **151.** Lateral view. **152.** Abdomen, ventral view. **153.** Left palp, prolateral view. **154.** Same, dorsal view. **155.** Same, retrolateral view.

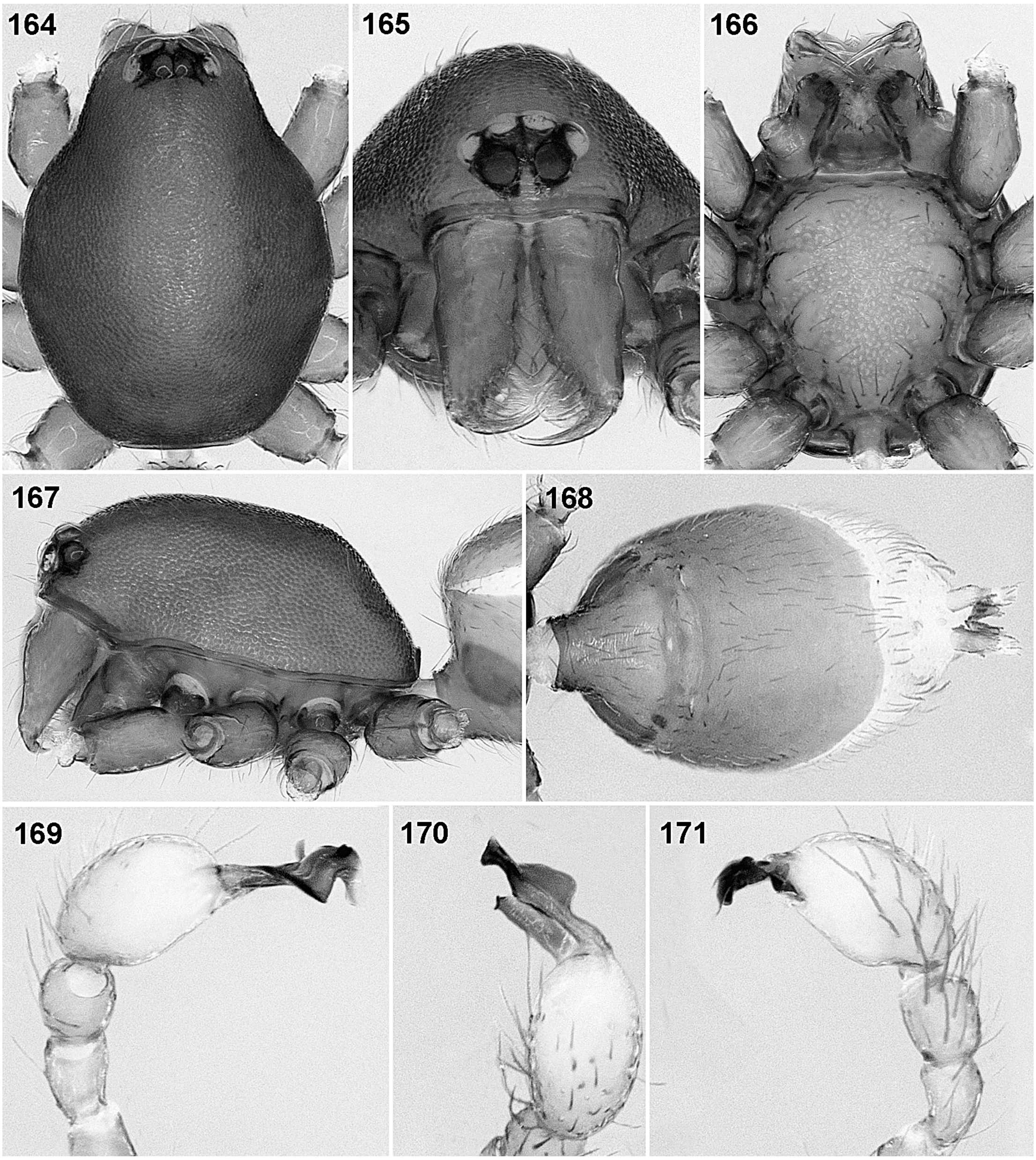
circular, covering about 2/3 of abdominal length. Palp: embolus dorsoventrally flattened, distally enlarged in dorsal view, with a retrolateral semicircular incision; conductor originating at prolateral embolic base, narrowing distally and with a large retrodorsally projected sclerotized triangular lamella (figs. 83–85, 296, 297).

FEMALE (PBI_OON 40519, figs. 86–93, 322): Total length 2.63. Dorsal scutum



Figs. 156–163. *Simlops cristinae*, male. **156.** Cephalothorax, dorsal view. **157.** Same, anterior view. **158.** Same, ventral view. **159.** Lateral view. **160.** Abdomen, ventral view. **161.** Left palp, prolateral view. **162.** Same, dorsal view. **163.** Same, retrolateral view.

absent. Epigastric furrow straight, medially slightly sclerotized, connected laterally to anterior spiracles; postepigastric scutum restricted to groove connecting posterior spiracles, not enlarged laterally around posterior spiracles, with discrete lateral sclerotizations. Genitalia with large, strong posteromedian rod, triangular anteriorly; broad, M-shaped transverse bar, without medial plate at epigastric furrow area and convergent, lateral apodemes thick (figs. 93, 322).



Figs. 164–171. *Simlops jamesbondi*, male. **164.** Cephalothorax, dorsal view. **165.** Same, anterior view. **166.** Same, ventral view. **167.** Cephalothorax, lateral view. **168.** Abdomen, ventral view. **169.** Left palp, prolateral view. **170.** Same, dorsal view. **171.** Same, retrolateral view.

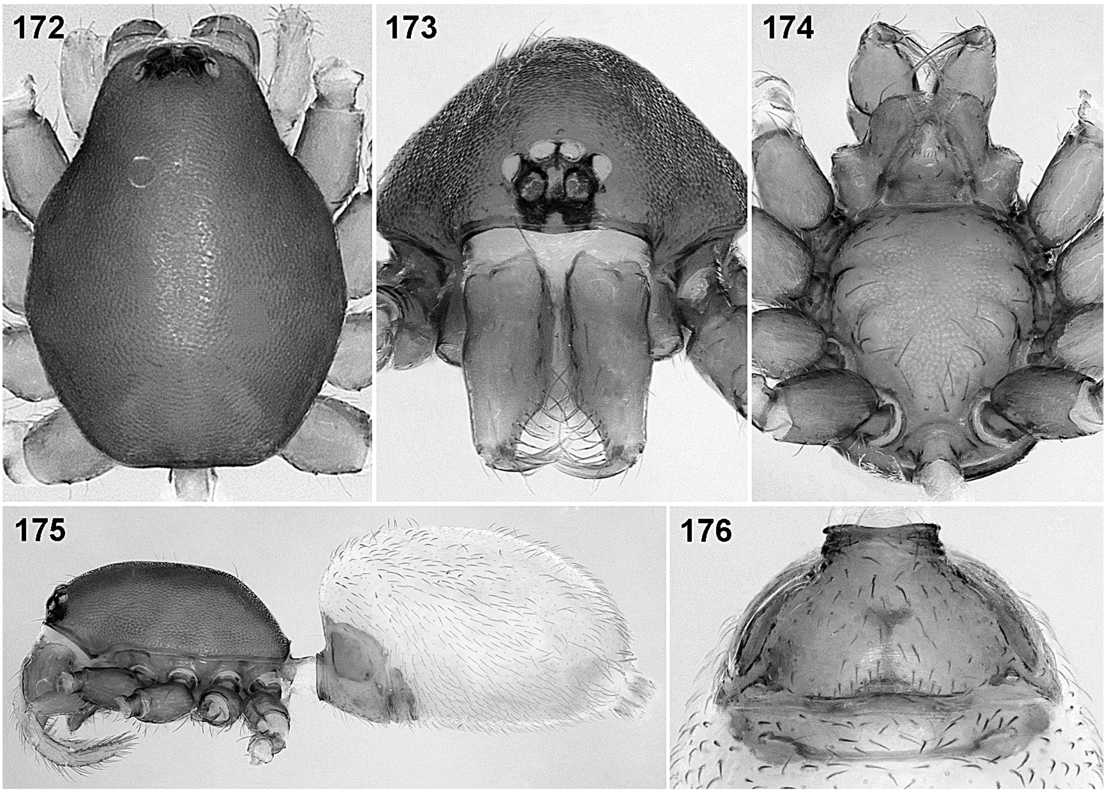
OTHER MATERIAL EXAMINED: **BRAZIL:** *Amazonas*: Manaus, Embrapa (2°53′33.26″S 59°58′17.02″W), Mar. 07, 2001, H. Höfer, 1♀ (SMNK PBI_OON 40520).

DISTRIBUTION: Known only from the type locality.

Simlops juruti Bonaldo, new species

Figures 13–20, 26, 94–115, 279, 298, 299, 323

TYPES: Male holotype from Platô do Rio Juruti, Juruti, Pará, Brazil (02°36′10.6″S 56°12′25.8″W), Sept. 04, 2002, to Sept. 11,



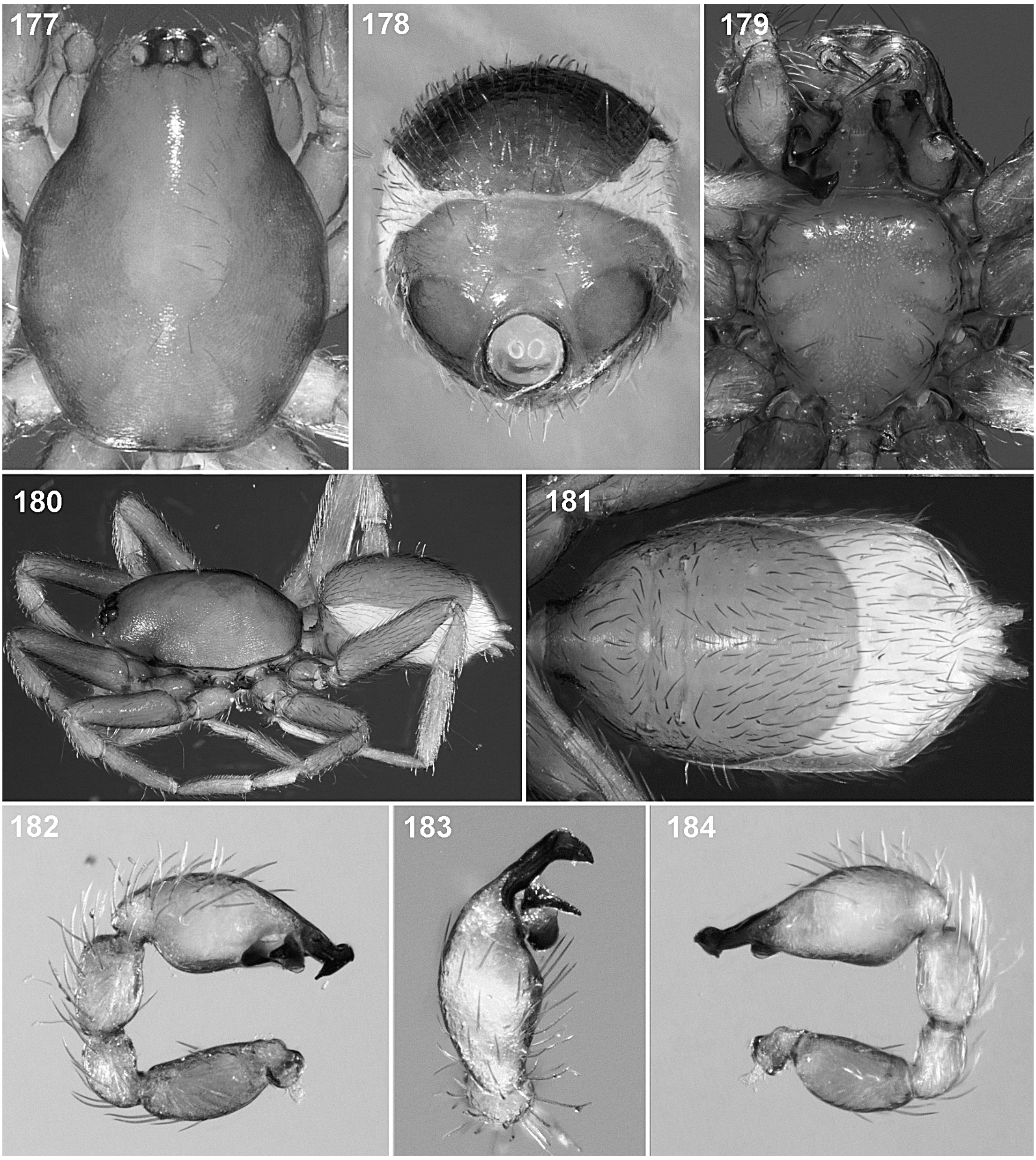
Figs. 172–176. *Simlops jamesbondi*, female. **172.** Cephalothorax, dorsal view. **173.** Same, anterior view. **174.** Same, ventral view. **175.** Lateral view. **176.** Epigyne, ventral view.

2002, A.B. Bonaldo and D.D. Guimarães, (MPEG 19167 PBI_OON 40737); female paratype from Vale do Igarapé Mutum, Plato do Rio Juruti, Juruti, Pará, Brazil (02°36′45.2″S 56°11′27.5″W), June 08, 2008, N. Lo Man Hung et al. (MPEG 19168 PBI_OON 40506)

ETYMOLOGY: The specific epithet is a name in apposition taken from the type locality.

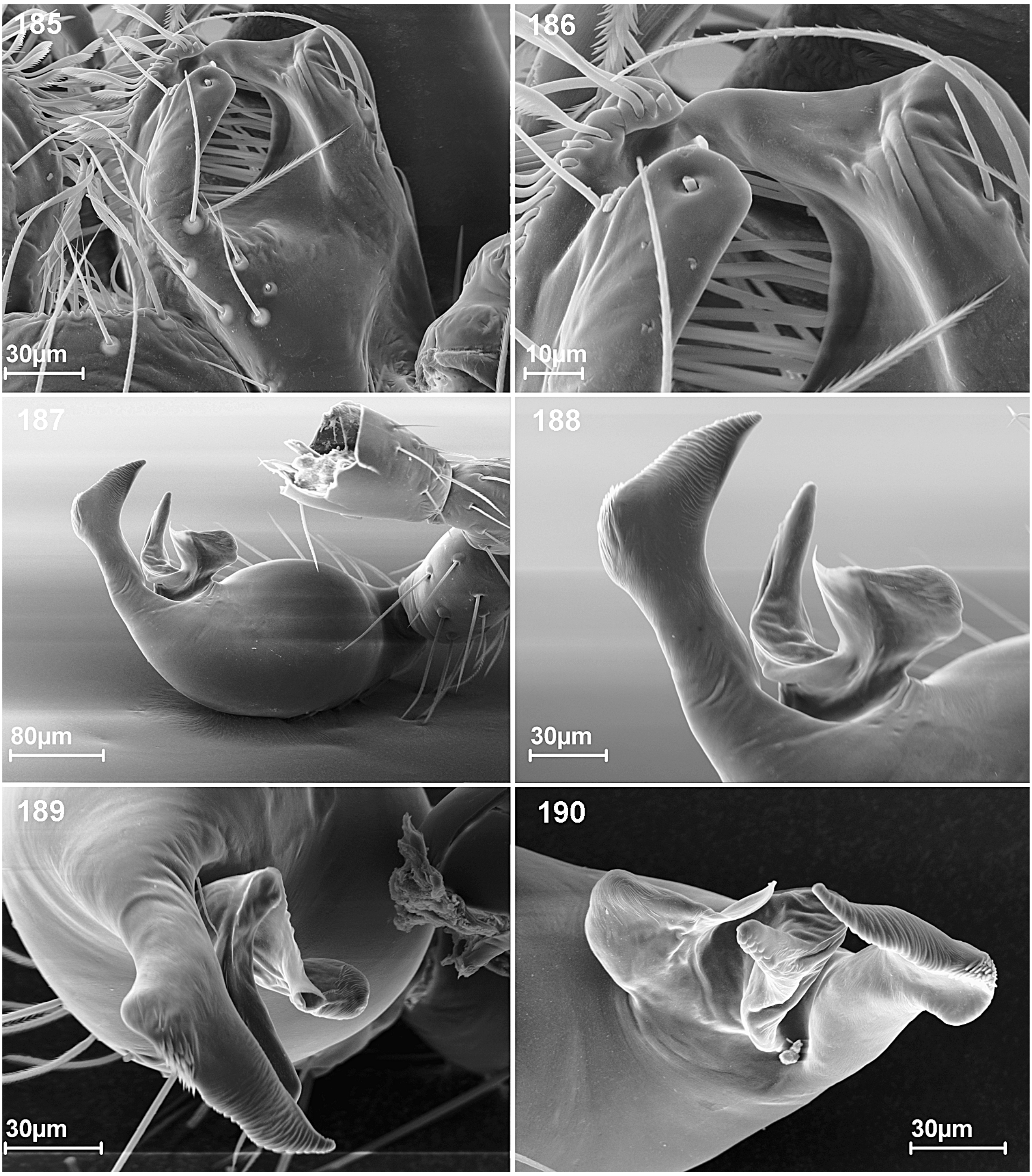
DIAGNOSIS: Males of *Simlops juruti* resemble those of *S. nadinae* and *S. campinarana* by the hyaline conductor shorter than the embolus, and by the dorsoventrally flattened embolus, presenting a prolateral process; differ from those of *S. nadinae* by the embolus with longer apex and from those of *S. campinarana* by the smaller prolateral process and by the embolar apex pointing apically (figs. 298, 299). Females differ from those of both *S. nadinae* and *S. campinarana* by a deep median notch in the epigastric furrow margin (figs. 115, 323).

MALE (PBI_OON 40505, figs. 13–16, 26, 94–107, 279, 298, 299): Total length 1.90. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions pale white, abdominal scuta orange-brown. Sternal microsculpture covering almost entire surface, absent in front of coxae. Endites with retrolateral process short, stout; prolateral process stout, rounded, strongly folded retrolaterally; median process inconspicuous (figs. 102, 103, 279). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus enlarged medially, bearing a median process inserted in prolateral margin, abruptly narrowing toward distal end; conductor small, lamellar, inserted in the bulbus, adjacent to embolus base (figs. 99–101, 104–107, 298, 299).



Figs. 177–184. *Simlops cachorro*, male. **177.** Cephalothorax, dorsal view. **178.** Abdomen, anterior view. **179.** Cephalothorax, ventral view. **180.** Lateral view. **181.** Abdomen, ventral view. **182.** Left palp, prolateral view. **183.** Same, dorsal view. **184.** Same, retrolateral view.

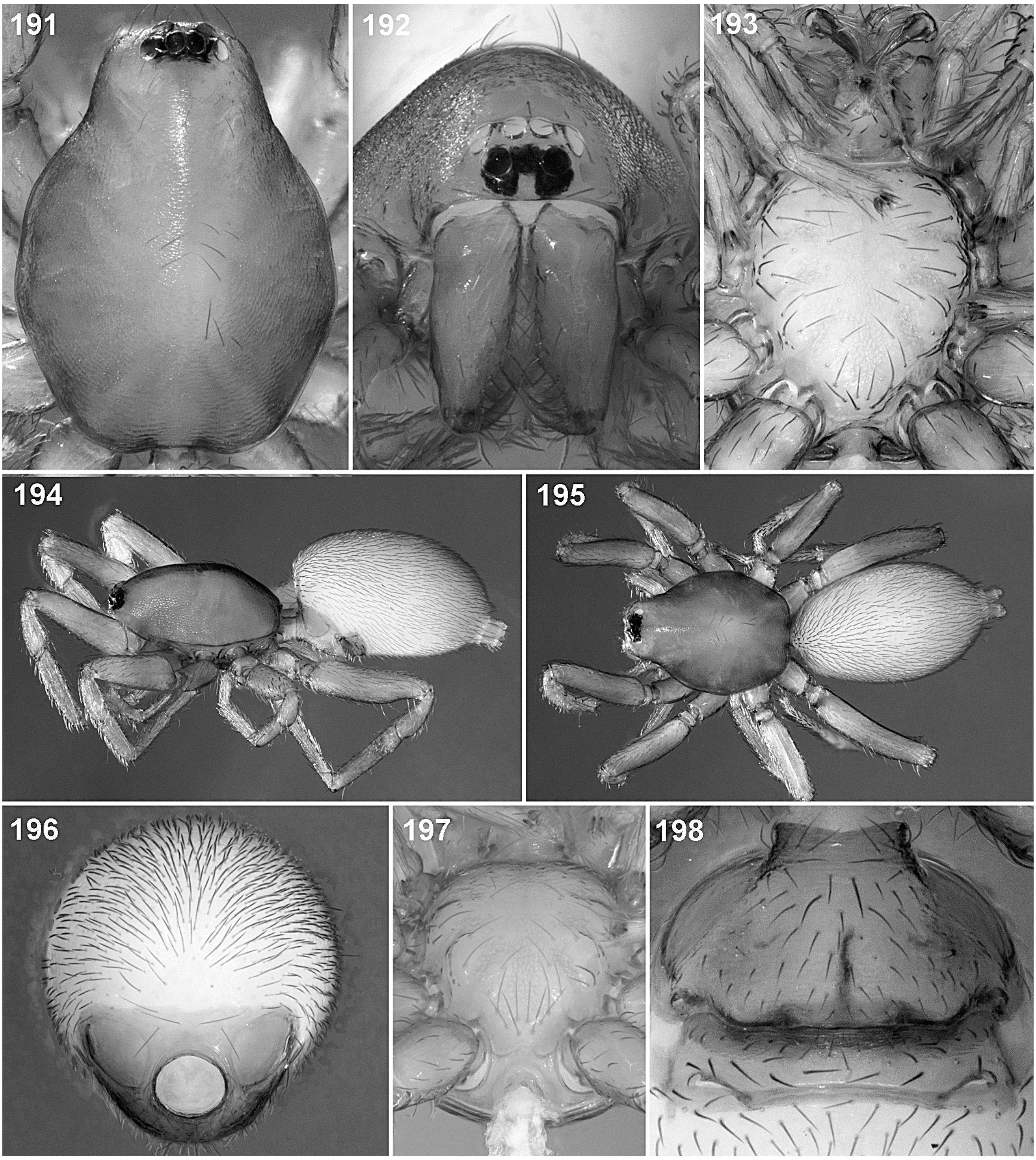
FEMALE (PBI_OON 40506, figs. 17–20, 108–115, 323): Total length 2.54. Dorsal pedicel joint area above lorum not fused to carapace (fig. 113). Dorsal scutum absent. Epigastric furrow medially procurved, medially not sclerotized, with a deep median notch, not connected laterally to anterior spiracles; postepigastric scutum restricted to groove connecting posterior spiracles, slightly enlarged laterally around posterior spiracles, without discrete lateral sclerotizations. Genitalia with posteromedian rod progressively



Figs. 185–190. *Simlops cachorro*, male. **185.** Left endite, ventral view. **186.** Detail of apex of left distal endite, ventral view. **187–190.** Left palp. **187.** Ventral view. **188.** Embolus, ventral view. **189.** Embolus, dorsal view. **190.** Embolus, distal view.

thick toward anterior end, triangular; M-shaped transverse bar with enlarged central semicircular area close to epigastric furrow and long, nearly parallel lateral apodemes (figs. 115, 323).

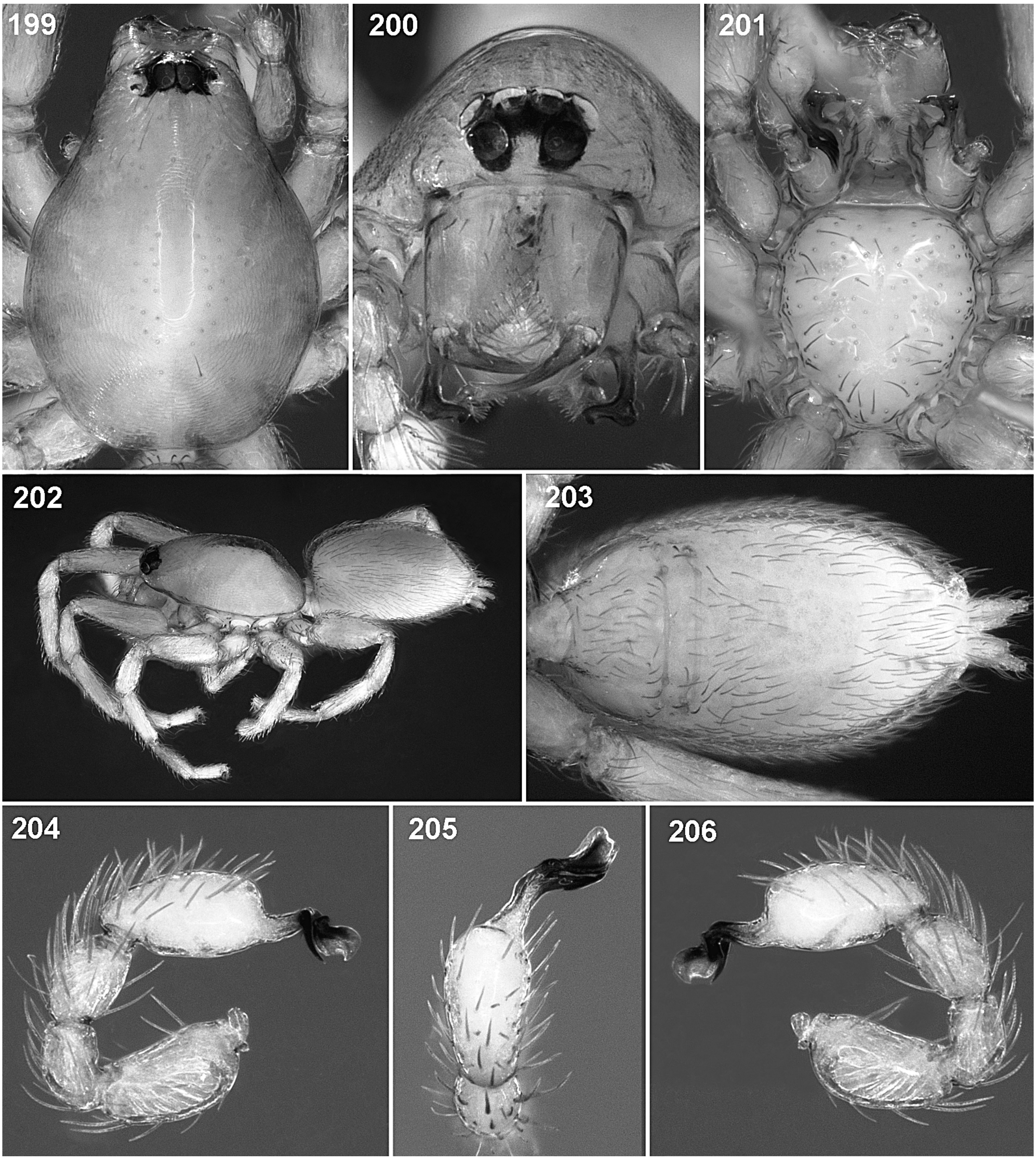
OTHER MATERIAL EXAMINED: **BRAZIL:** Para: Juruti, Platô do Rio Juruti (01°36′44.7″S 56°11′39.2″W), Aug. 08, 2006 to Aug. 15, 2006, D.F. Candiani and N.F. Lo-Man-Hung, 1♂ (MPEG 10904 PBI_OON 40504); (Vale do



Figs. 191–198. *Simlops cachorro*, female. **191.** Cephalothorax, dorsal view. **192.** Same, anterior view. **193.** Same, ventral view. **194.** Lateral view. **195.** Dorsal view. **196.** Abdomen, anterior view. **197.** Cephalothorax, ventroposterior view. **198.** Epigyne, ventral view.

Igarapé Mutum, 01°36′44.7″S 56°11′39.2″W), Aug. 08, 2006 to Aug. 15, 2006, D.F. Candiani and N.F. Lo-Man-Hung, 1♂ (MPEG 10903 PBI_OON 40505); Nov. 15, 2007, to Nov. 22, 2007, N. Lo Man Hung and D. Candiani, 1♂ (IBSP 161823 PBI_OON 40514).

DISTRIBUTION: Known only from the type locality.

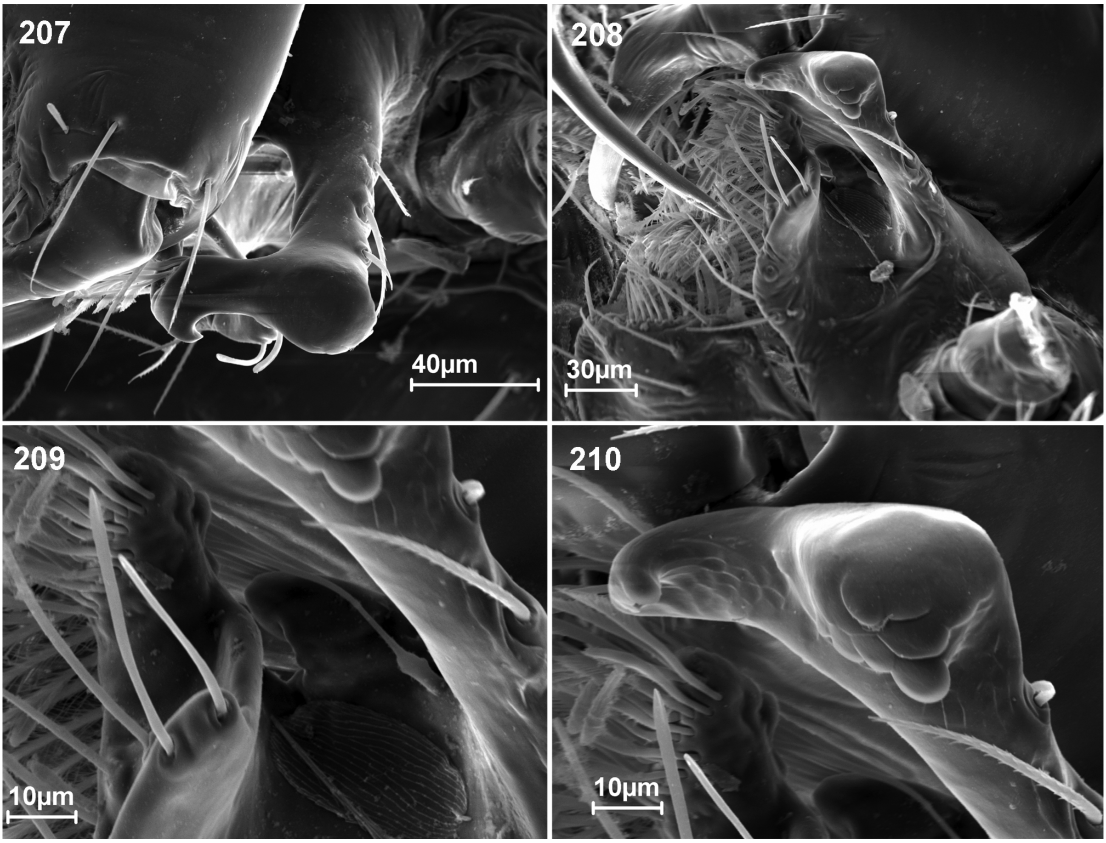


Figs. 199–206. *Simlops platnicki*, male. **199.** Cephalothorax, dorsal view. **200.** Same, anterior view. **201.** Same, ventral view. **202.** Lateral view. **203.** Abdomen, ventral view. **204.** Left palp, prolateral view. **205.** Same, dorsal view. **206.** Same, retrolateral view.

Simlops nadinae Ruiz, new species

Figures 116–131, 280, 300, 301, 324

TYPES: Male holotype from Vale do Igarapé Mutum, Plato do Rio Juruti, Juruti, Pará, Brazil, 02°36′45.2″S 56°11′27.5″W), Aug. 22, 2011, Bastos et al. (MPEG 19174 PBI_OON 40747); female paratype from Platô do Rio Juruti, Juruti, Pará, Brazil (2°30′7.74″S 56°9′52.43″W), Aug. 25, 2011, Bastos et al. (MPEG 19179 PBI_OON 40697).



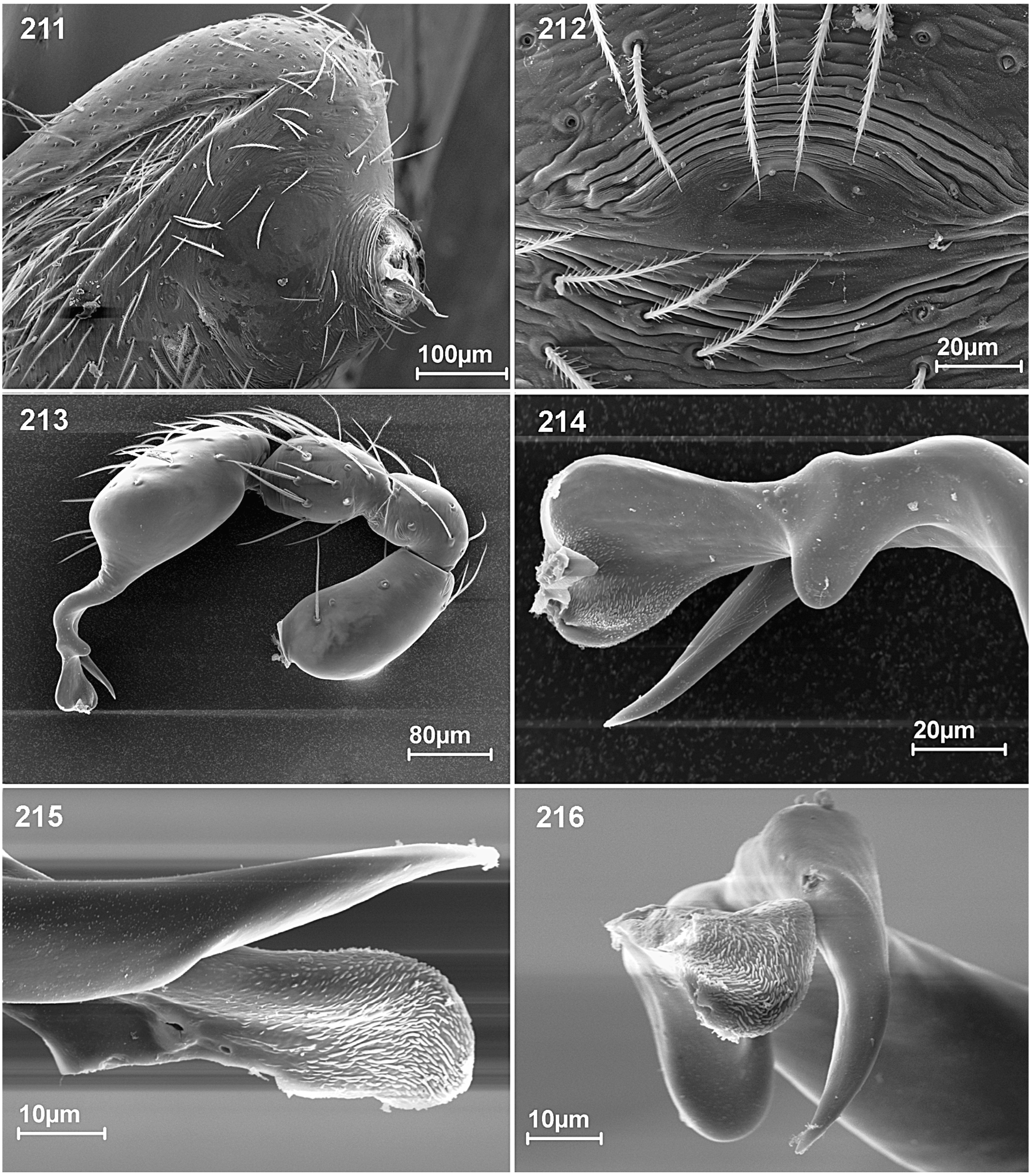
Figs. 207–210. *Simlops platnicki*, male. **207.** Apex of left endite, anterolateral view. **208.** Left endite, ventral view. **209.** Detail of apex of endite, ventral view. **210.** Detail of retrolateral projection of apex of endite, ventral view.

ETYMOLOGY: The specific name is a patronym in honor of Nadine Dupérré, in recognition for her many contributions to oonopid taxonomy.

DIAGNOSIS: Males of *Simlops nadinae* differs from those of *S. juruti* and *S. campinarana* by the embolus with truncated apex and by the prolateral process inserted apically, about the same length as the embolar apex (figs. 300, 301). Females differ from those of *S. juruti* and *S. campinarana* by the straight epigastric furrow margin, without median notch (fig. 131, 324).

MALE (PBI_OON 40566, figs. 116–123, 280, 300, 301): Total length 1.70. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions pale white, abdominal scuta pale orange. Sternal microsculpture covering almost entire surface, absent in front of coxae. Endites with retrolateral distal projection inconspicuous, indistinct from median process; prolateral projection large, blunt, strongly folded retrolaterally (fig. 280). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus enlarged medially, bearing an apical process inserted in prolateral margin, distal end truncated; conductor small, lamellar, inserted adjacent to embolus base (figs. 121–123, 300, 301).

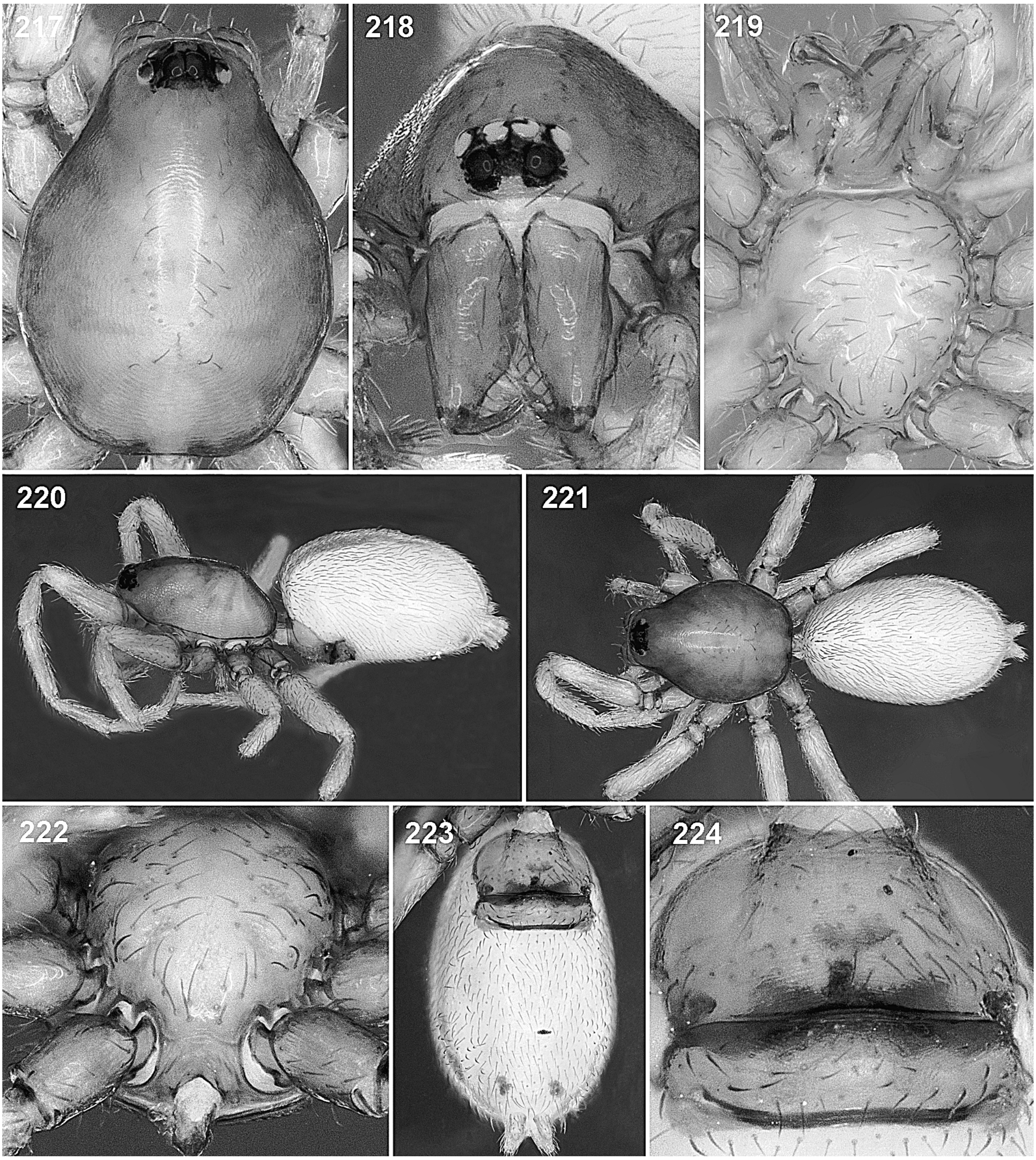
FEMALE (00040697, figs. 124–131, 324): Total length 2.10. Dorsal scutum absent. Epigastric furrow medially straight, medially sclerotized, without median notch, not connected laterally to anterior spiracles; postepigastric scutum restricted to groove connecting posterior spiracles, enlarged laterally



Figs. 211–216. *Simlops platnicki*, male. **211.** Anteior portion of abdomen, lateral view. **212.** Epiandrous region, ventral view. **213.** Left palp, retrolateral view. **214.** Left palp, embolus, retrolateral view. **215.** Left palp, embolus tip, prolateral view. **216.** Right palp, embolus, distal view.

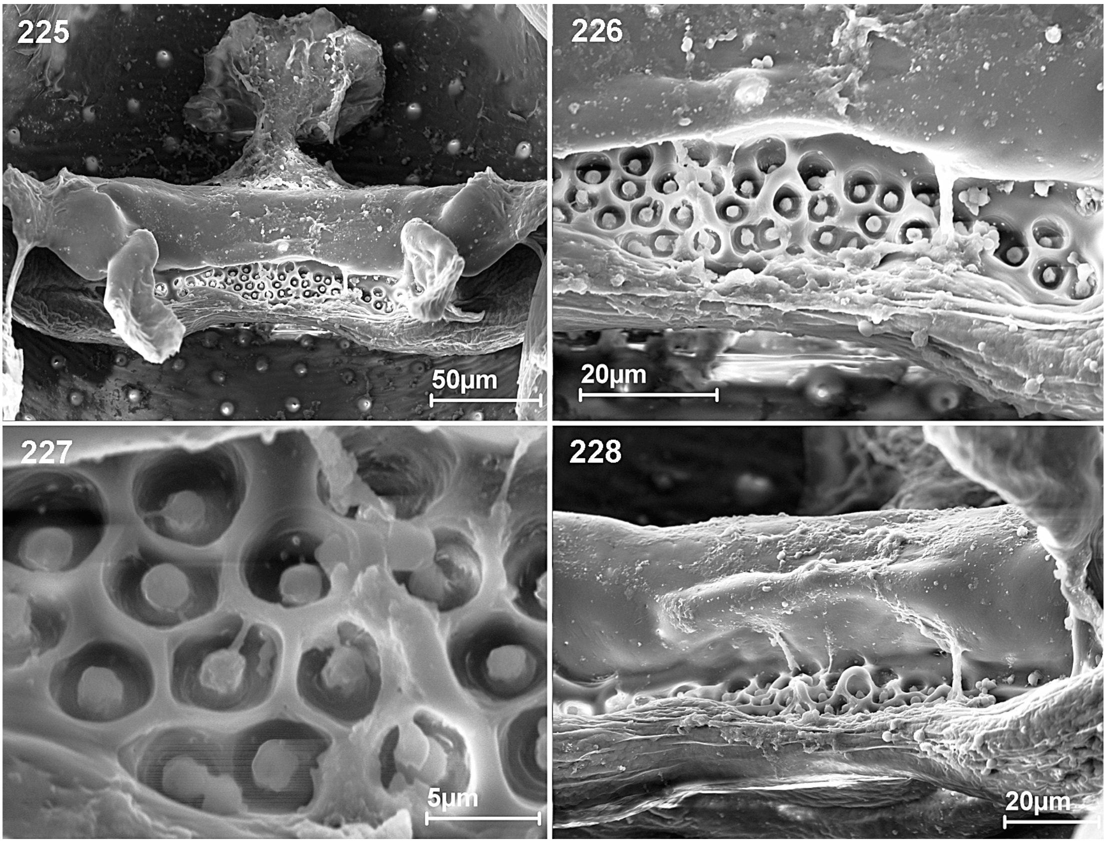
around posterior spiracles, without discrete lateral sclerotizations. Genitalia with thick posteromedian rod, anterior end quadrangular; sinuous, small transverse bar with short, thin, nearly parallel lateral apodemes (figs. 131, 324).

OTHER MATERIAL EXAMINED: **BRAZIL:** *Pará:* Juruti (Plato Capiranga, 02°28′22.1″S



Figs. 217–224. *Simlops platnicki*, female. **217.** Cephalothorax, dorsal view. **218.** Same, anterior view. **219.** Same, ventral view. **220.** Lateral view. **221.** Dorsal view. **222.** Cephalothorax, ventroposterior view. **223.** Abdomen, ventral view. **224.** Epigyne, ventral view.

56°12′29.4″W), May 15, 2009, N. Lo Man Hung et al., 1♂ (MPEG 19186 PBI_OON 40756); June 03, 2007, to June 10, 2007, D.F. Candiani and N.F. Lo-Man-Hung, 1 ♂ (MPEG 19178 PBI_OON 40566); (Platô do Rio Juruti, 2°28′0.6″S 56°12′42.2″W), Nov. 04, 2002, to Nov. 11, 2002, A.B. Bonaldo et al., 1♂ (MPEG 19180 PBI_OON 40687); Apr. 07, 2010, to Apr. 12, 2010, Rodrigues et al., 1♀ (MPEG 19175 PBI_OON 40694); Apr. 07, 2010, to Apr. 12, 2010, Rodrigues et al., 1♀ (MPEG 19176 PBI_OON 40695);



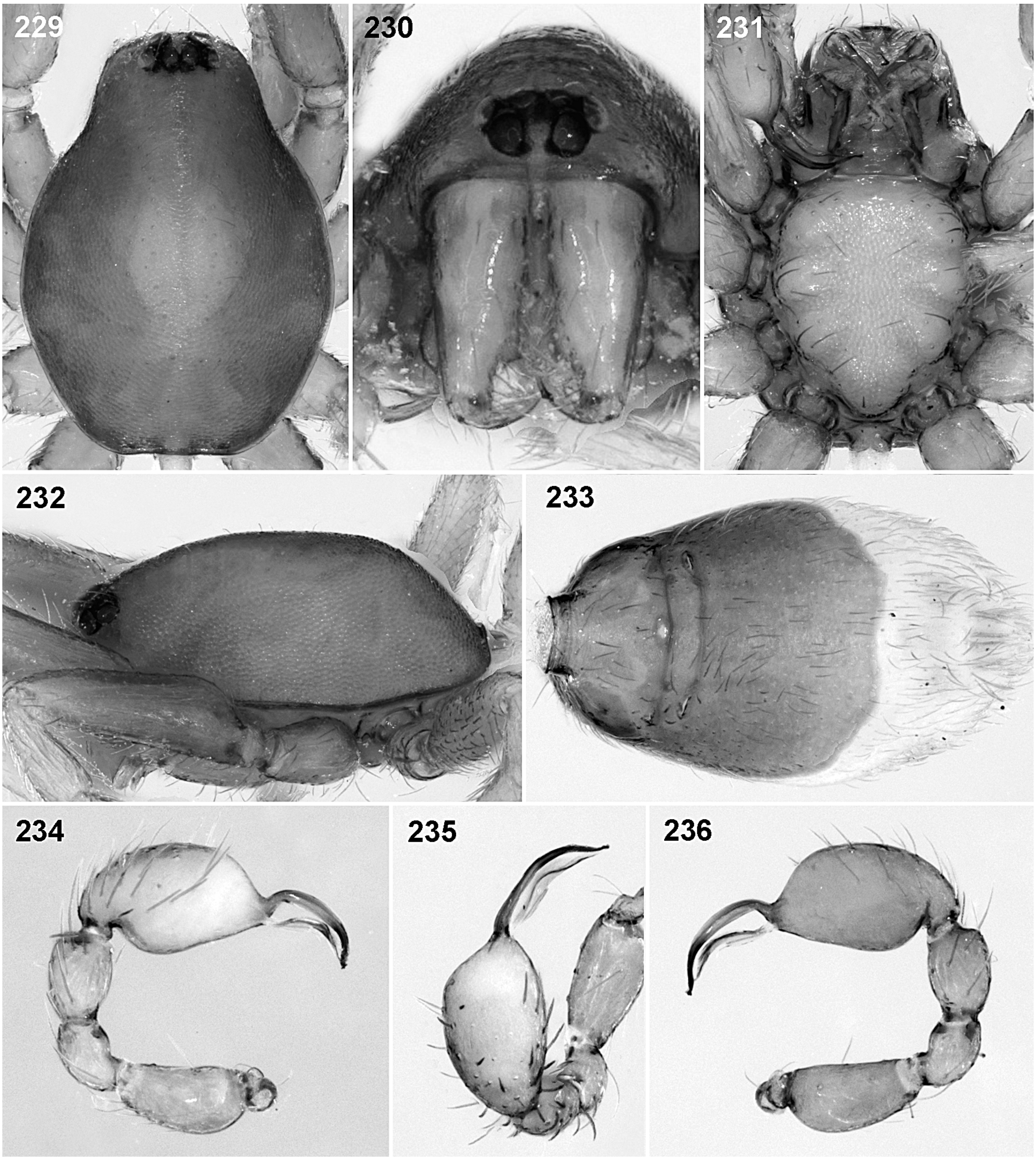
Figs. 225–228. *Simlops platnicki*, female. **225.** Epigyne, digested, dorsal view. **226.** Detail of porous plate, dorsal view. **227.** Detail of pores, dorsal view. **228.** Porous plate, posterolateral view.

Apr. 06, 2010, to Apr. 11, 2010, Rodrigues et al., 1♀ (MPEG 19177 PBI_OON 40696); Nov. 04, 2002, to Nov. 11, 2002, A.B. Bonaldo et al., 1♂ (AMNH PBI_OON 40748); Apr. 08, 2010, to Apr. 13, 2010, Rodrigues et al., 1♂ (IBSP 161824 PBI_OON 40749); Sept. 11, 2002, to Sept. 16, 2002, A.B. Bonaldo et al., 1♂ (MPEG 19181 PBI_OON 40751); Sept. 06, 2002, to Sept. 11, 2002, Rodrigues et al., 1♂ (MPEG 19182 PBI_OON 40752); Apr. 07, 2010, to Apr. 12, 2010, Rodrigues et al., 1♂ (MPEG 19184 PBI_OON 40754); Feb. 18, 2011, to Feb. 23, 2011, N. Lo Man Hung et al., 1♂ (MPEG 19187 PBI_OON 40757); Apr. 08, 2010, to Apr. 13, 2010, Rodrigues et al., 1♂ (MPEG 19191 PBI_OON 40761); Apr. 08, 2010, to Apr. 13, 2010, Rodrigues et al., 1♂ (MPEG 19192 PBI_OON 40762); (Sítio Três Irmãos, 02°27′51.4″S 56°00′8.6″W), Aug. 08, 2006, to Aug. 15, 2006, D.F. Candiani and N.F. Lo-Man-Hung, 1♂ (MPEG 10905 PBI_OON 40750); (Vale do Igarapé Mutum, Platô do Rio Juruti, 02°36′45.2″S 56°11′27.5″W), Sept. 04, 2002, to Sept. 11, 2002, A.B. Bonaldo et al., 1♂ (MPEG 19183 PBI_OON 40753); Feb. 18, 2011, to Feb. 23, 2011, N. Lo Man Hung et al., 1♂ (MPEG 19185 PBI_OON 40755); May 06, 2010, to May 11, 2010, Rodrigues et al., 1♂ (MPEG 19188 PBI_OON 40758); Sept. 04, 2002, to Sept. 11, 2002, A.B. Bonaldo et al., 1♂ (MPEG 19189 PBI_OON 40759); May 06, 2010, to May 11, 2010, Rodrigues et al., 1♂ (MPEG 19190 PBI_OON 40760).

DISTRIBUTION: Known only from the vicinities of Juruti, Eastern Amazonia.

Simlops campinarana Brescovit, new species
Figures 132–147, 281, 302, 303, 325

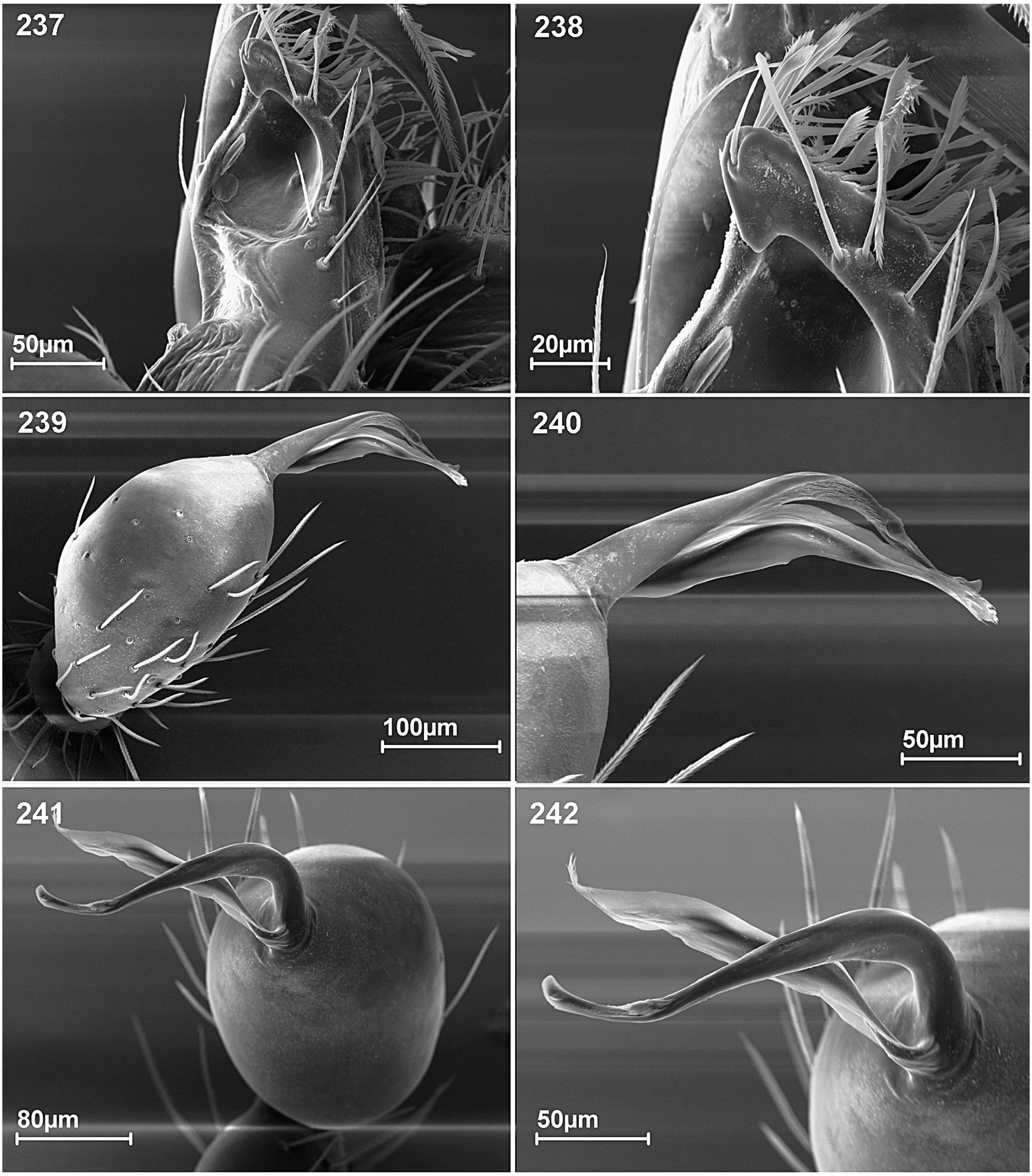
TYPES: Male holotype from Fazenda Experimental da UFAM, km 38 of Road



Figs. 229–236. *Simlops bodanus*, male. **229.** Cephalothorax, dorsal view. **230.** Same, anterior view. **231.** Same, ventral view. **232.** Same, lateral view. **233.** Abdomen, ventral view. **234.** Left palp, prolateral view. **235.** Same, dorsal view. **236.** Same, retrolateral view.

BR174, Manaus, Amazonas, Brazil (2°39′21.23″S 60°4′31.25″W), June 18, 2009, B. Machado col. (MPEG 19160 PBI_OON 40497); female paratype from same locality, Sept. 27, 2008, B. Machado col. (MPEG 19161 PBI_OON 40496).

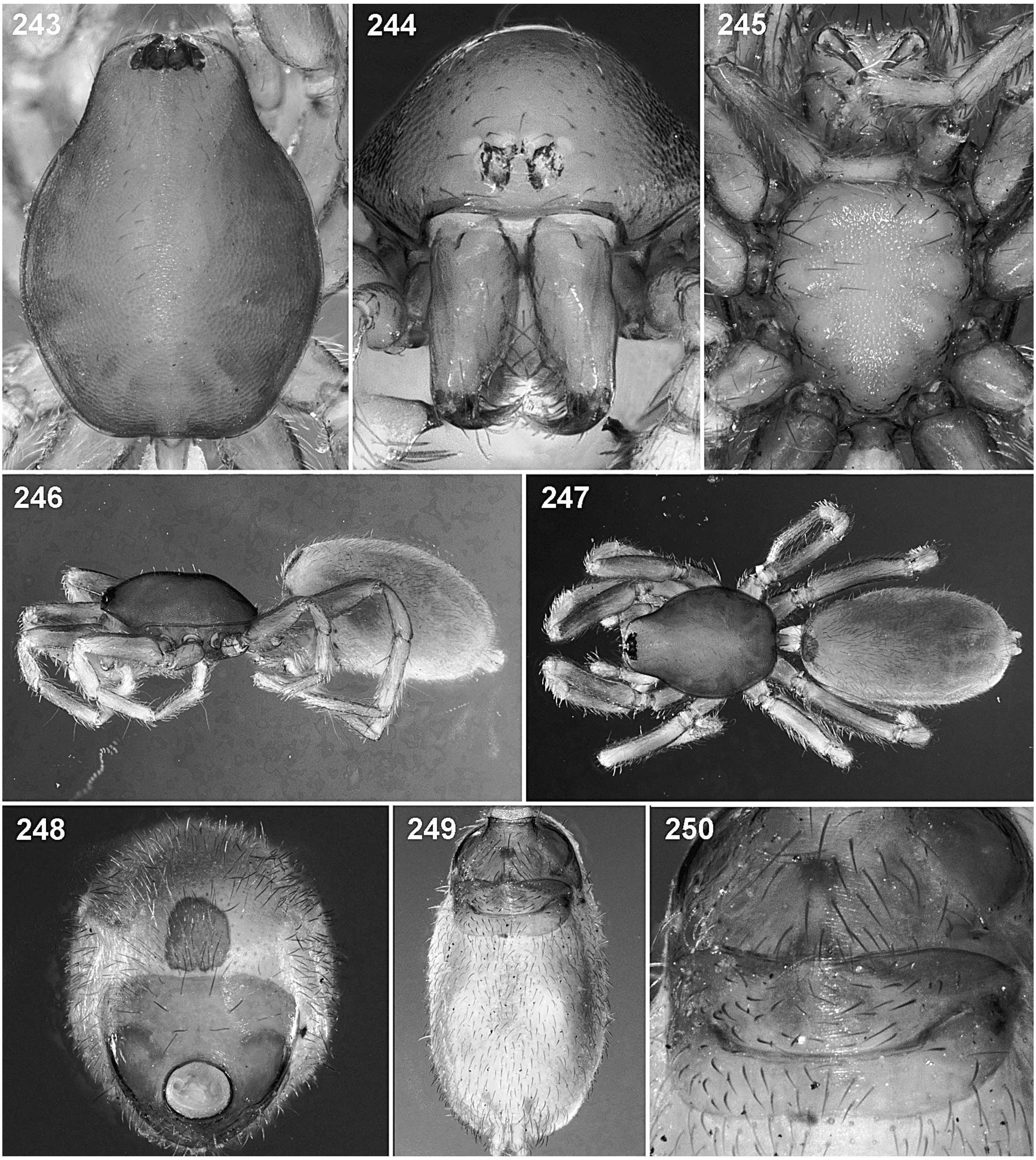
ETYMOLOGY: From Brazilian Portuguese, the specific name is a substantive in apposition, referring to the Campinarana, a phytophysiognomy occurring on isolated patches of sandy soil, low vegetation in the rain forest matrix of Central Amazonia. The field data



Figs. 237–242. *Simlops bodanus*, male. **237.** Right endite, ventral view. **238.** Detail of apex of right endite, ventral view. **239.** Left palp, dorsal view. **240.** Left palp, embolus, dorsal view. **241.** Left palp, distal view. **242.** Left palp, embolus, distal view.

of the known records suggest that this species may be restricted to these areas.

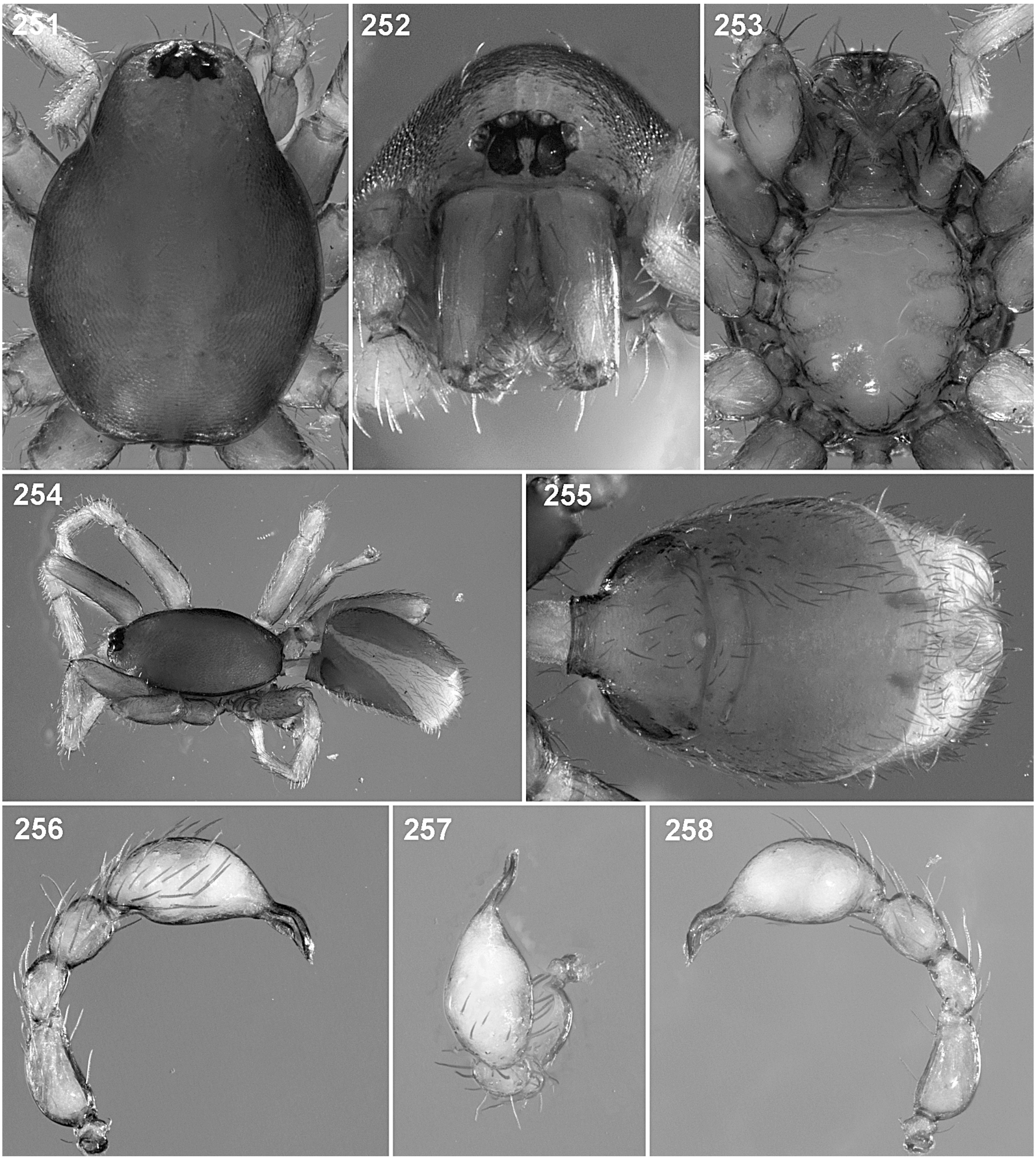
DIAGNOSIS: Males of *Simlops campinarana* differs from those of *S. nadinae* by the embolus with longer apex and from those of *S. juruti* by the large, deeply incised prolateral process and embolar apices pointing basally (figs. 302, 303). Females differ from those of *S. nadinae* and *S. juruti* by the combined presence of a medially procurved



Figs. 243–250. *Simlops bodanus*, female. **243.** Cephalothorax, dorsal view. **244.** Same, anterior view. **245.** Same, ventral view. **246.** Lateral view. **247.** Dorsal view. **248.** Abdomen, anterior view. **249.** Same, ventral view. **250.** Epigyne, ventral view.

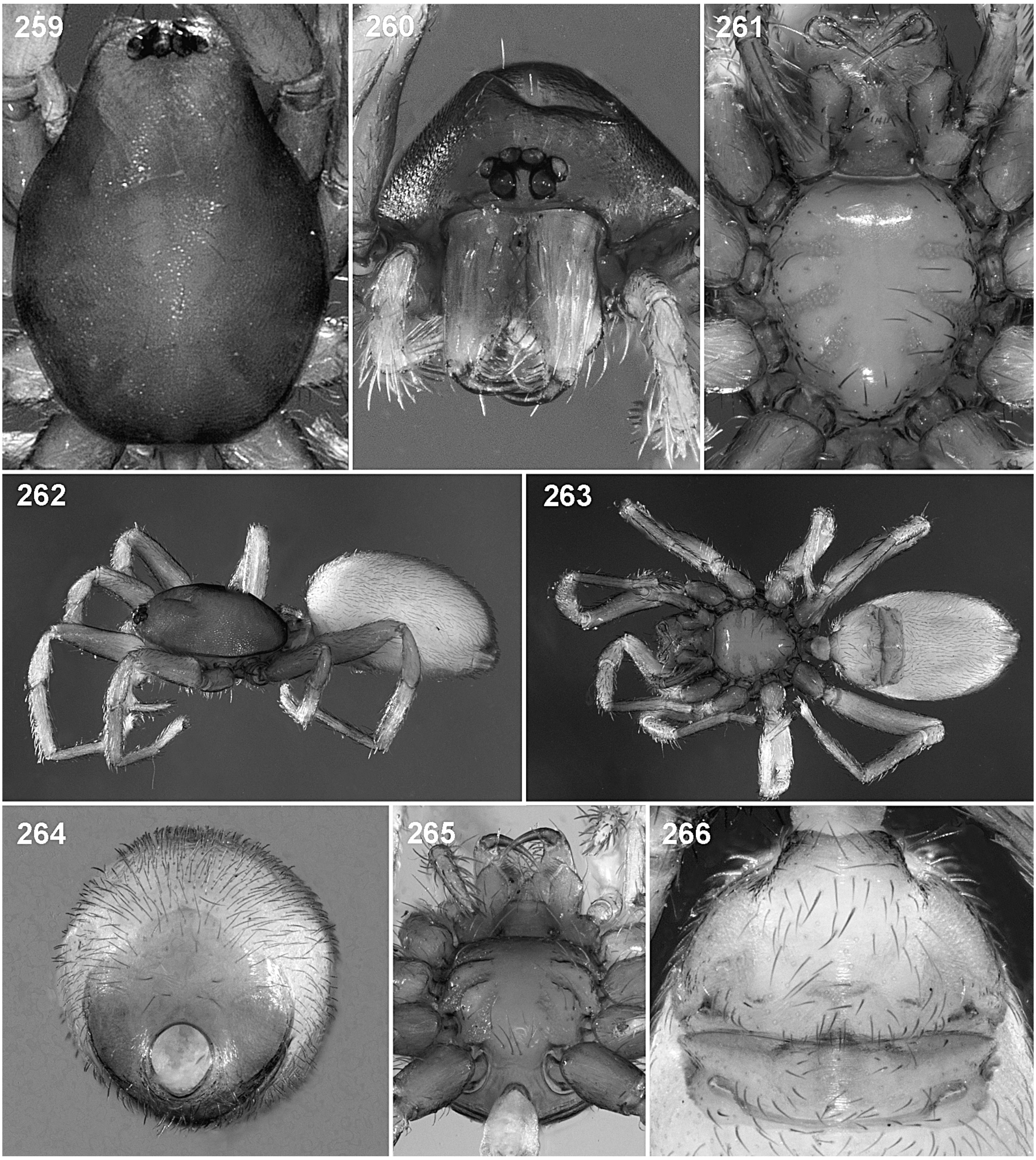
margin of epigastric furrow and large, T-shaped anteromedian rod apex (figs. 147, 325).

MALE (PBI_ONN_40496, figs. 132–139, 281, 302, 303): Total length 2.02. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions and scuta pale orange. Sternal microsculpture covering almost entire surface, absent in front of coxae. Endites with short, inconspicuous retrolateral process, large, rounded



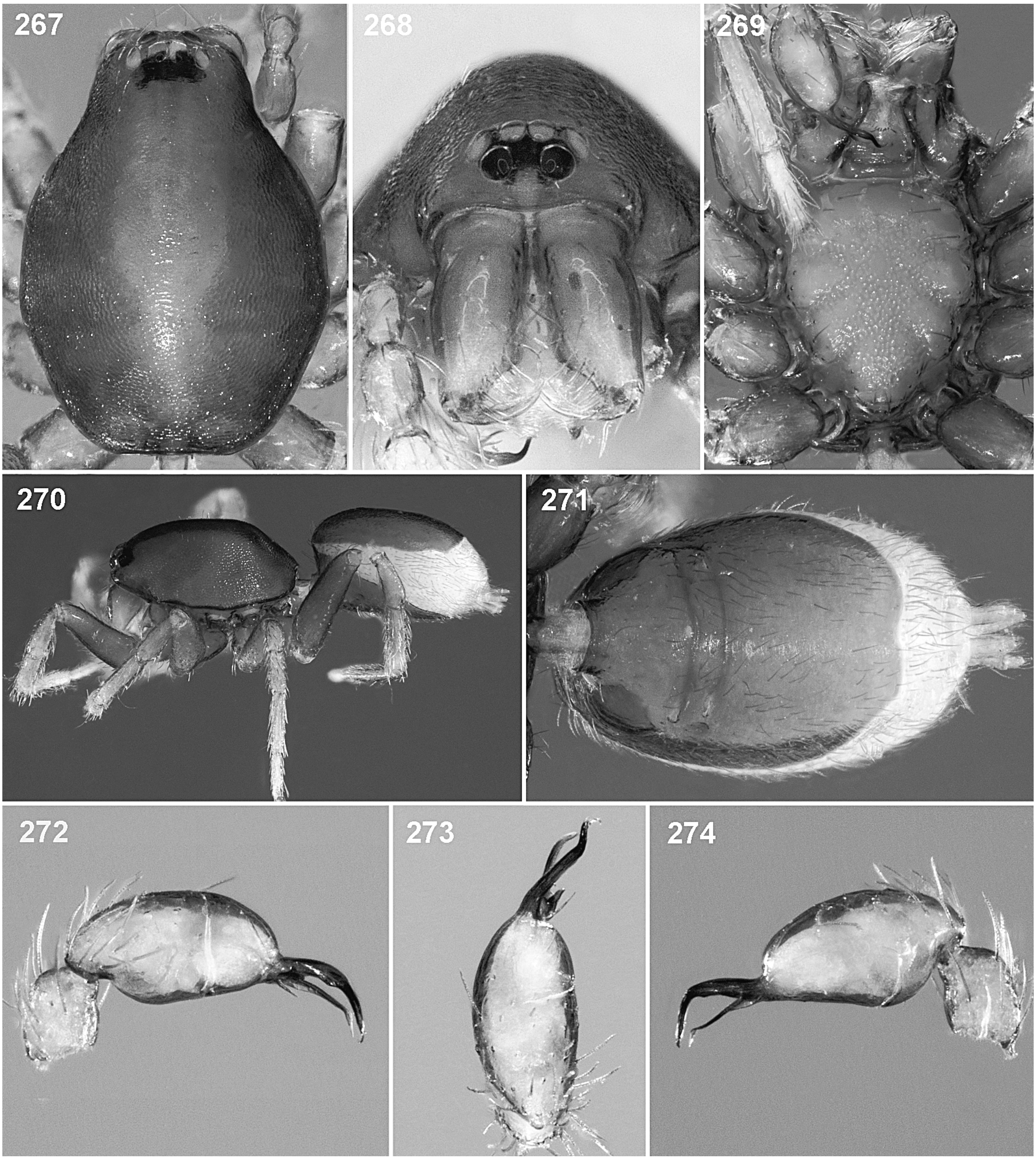
Figs. 251–258. *Simlops guyanensis*, male. **251.** Cephalothorax, dorsal view. **252.** Same, anterior view. **253.** Same, ventral view. **254.** Lateral view. **255.** Abdomen, ventral view. **256.** Left palp, prolateral view. **257.** Same, dorsal view. **258.** Same, retrolateral view.

median process and stout prolateral process, strongly curved retrolaterally (fig. 281). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus enlarged medially, dorsoventraly flattened, bearing a median process inserted in prolateral margin, conductor relatively long, lamellar, inserted in the bulbus, adjacent to embolus base (figs. 137–139, 302, 303).



Figs. 259–266. *Simlops guyanensis*, female. **259.** Cephalothorax, dorsal view. **260.** Same, anterior view. **261.** Same, ventral view. **262.** Lateral view. **263.** Ventral view. **264.** Abdomen, anterior view. **265.** Cephalothorax, ventroposterior view. **266.** Epigyne, ventral view.

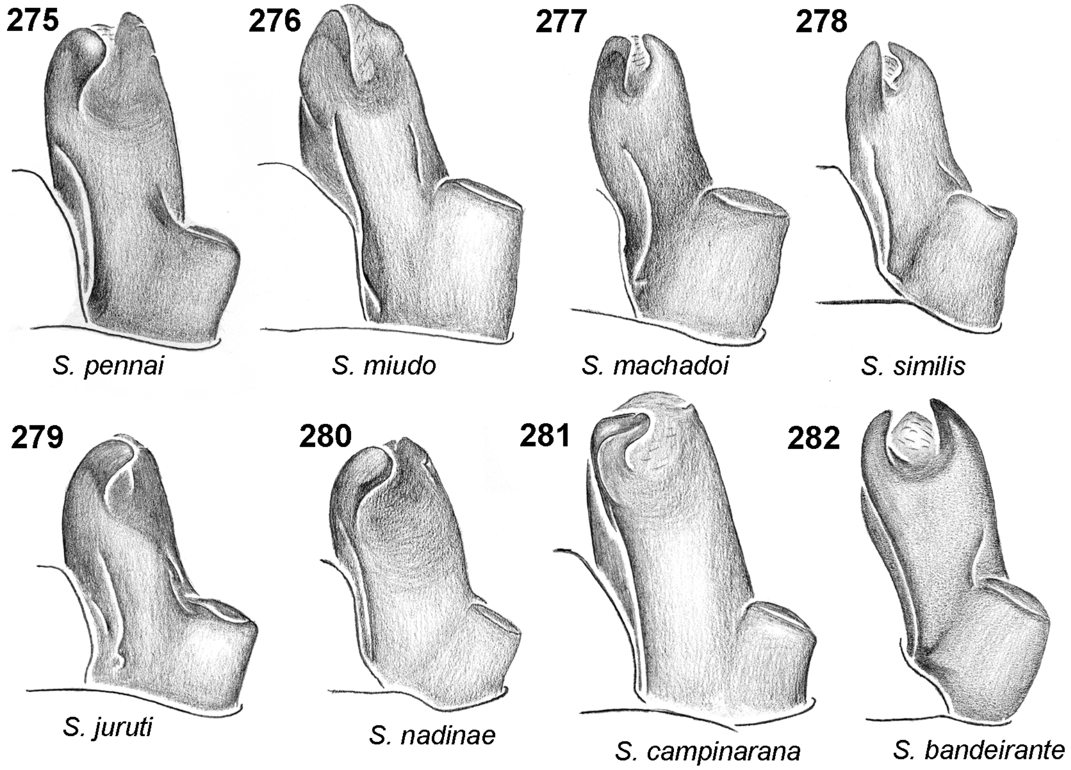
FEMALE (PBI_OON 40518, figs. 140–147, 325): Total length 2.35. Dorsal scutum absent. Epigastric furrow medially procurve, medially not sclerotized, without median notch, not connected laterally to anterior spiracles; postepigastric scutum extending beyond groove connecting posterior spiracles, enlarged laterally around posterior spiracles, without discrete lateral sclerotizations. Genitalia with thick posteromedian



Figs. 267–274. *Simlops guatopo*, male. **267.** Cephalothorax, dorsal view. **268.** Same, anterior view. **269.** Same, ventral view. **270.** Lateral view. **271.** Abdomen, ventral view. **272.** Left palp, prolateral view. **273.** Same, dorsal view. **274.** Same, retrolateral view.

rod, anterior end strongly enlarged, T-shaped; transverse bar almost straight, with large rectangular plate close to epigastric furrow and short, thick, nearly parallel lateral apodemes (figs. 147, 325).

OTHER MATERIAL EXAMINED: **BRAZIL:** *Amazonas:* Manaus, Fazenda Experimental da UFAM, km 38 of Road BR174 (2°39′21.23″S 60°4′31.25″W), June 17, 2009, B. Machado, 1♀ (INPA PBI_OON 40518).



Figs. 275–282. *Simlops* species, left male endite, ventral view. **275.** *S. pennai.* **276.** *S. miudo.* **277.** *S. machadoi.* **278.** *S. similis.* **279.** *S. juruti.* **280.** *S. nadinae.* **281.** *S. campinarana.* **282.** *S. bandeirante.*

DISTRIBUTION: Known only from the type locality.

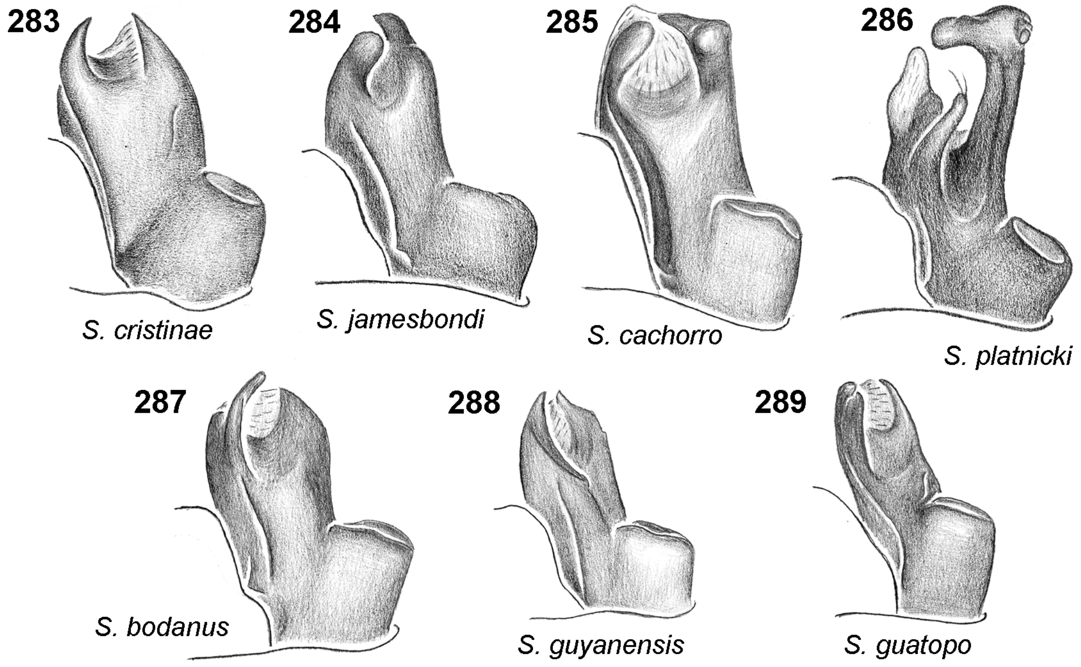
Simlops bandeirante Ott, new species
Figures 148–155, 282, 304, 305

TYPE: Male holotype from Fazenda Experimental da UFAM, km 38 of Road BR174, Manaus, Amazonas, Brazil (2°39′21.23″S 60°4′31.25″W), Sept. 20, 2008, B. Machado (MPEG 19157 PBI_OON 140495).

ETYMOLOGY: From Brazilian Portuguese, the bandeirantes were the participants of the Bandeiras, expeditions to Brazilian interior carried on in the 17th century to find gold and to imprison natives that would be sold as slaves. Literally, *bandeirante* means, "the one who carries a flag," and the specific name is a reference to the flag-shaped embolus in this species.

DIAGNOSIS: Males of *Simlops bandeirante* resemble those of S. *cristinae* by the wide ejaculatory opening and by the embolar insertion displaced retrolaterally, with the distal prolateral section of bulbus angling almost 90° in dorsal view. Differ by the relatively small, sclerotized, but not further-modified conductor and by the flattened, flag-shaped embolus (figs. 304, 305).

MALE (PBI_ONN_40495, figs. 148–155, 282, 304, 305): Total length 2.04. *Carapace* orange-brown, sternum pale orange, chelicerae, endites, and labium orange-brown; legs yellow, without color pattern; abdomen soft portions pale orange; abdominal scuta pale orange. Sternal microsculpture restricted to sternum middle area between coxae II and III and occupying almost entire area between coxae III and IV. Endites with stout, similarly sized retrolateral and prolateral processes, median process conspicuous (fig. 282). Postepigastric scutum almost rectangular, covering about 2/3 of abdominal length. Palp: embolus laterally flattened, with a ventral bilobed sclerotized expansion and large ejaculatory opening, abruptly narrowed toward pointed tip; conductor short and heavy



Figs. 283–289. *Simlops* species, left male endite, ventral view. **283.** *S. cristinae.* **284.** *S. jamesbondi.* **285.** *S. cachorro.* **286.** *S. platnicki.* **287.** *S. bodanus.* **288.** *S. guyanensis.* **289.** *S. guatopo.*

sclerotized, sinuous, inserted at embolus base (figs. 153–155, 304, 305).

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality.

Simlops cristinae Santos, new species

Figures 156–163, 283, 306, 307

TYPES: Male holotype from Fazenda Experimental da UFAM, km 38 of Road BR174, Manaus, Amazonas, Brazil (2°39′21.23″S 60°4′31.25″W), Feb. 07, 2009, B. Machado (MPEG 19159 PBI_OON 40493).

ETYMOLOGY: The specific name is a patronym in honor of arachnologist Cristina Anne Rheims (IBSP), in recognition for her many contributions to this paper.

DIAGNOSIS: Males of *Simlops cristinae* differ from those of *S. bandeirante* by the large conductor, presenting widened, unsclerotized base with an apically directed protrusion (figs. 306, 307).

MALE (PBI_OON 40493, figs. 156–163, 283, 306, 307): Total length 1.94. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions and scuta orange-brown. Sternal microsculpture medially and in furrows. Endites with retrolateral and prolateral processes sharply pointed, similarly sized; median process inconspicuous (fig. 283). Postepigastric scutum almost semicircular, covering about 2/3 of abdominal length. Palp: embolus stout, narrowed distally, with large ejaculatory opening; conductor with wide base, originating in the bulbus, adjacent to embolic base, narrowing distally and with a retrodorsally projected, sclerotized, oval lamella bearing a dorsal semitranslucent knob (figs. 161–163, 306, 307).

FEMALE: Unknown.

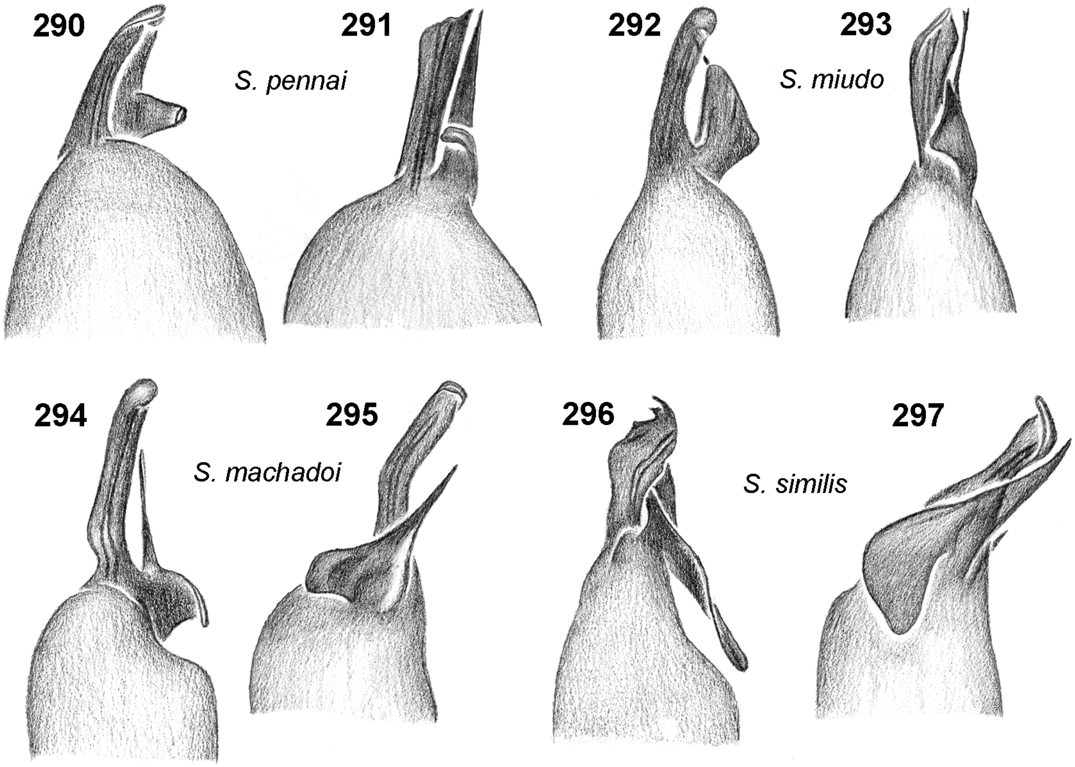
OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality.

Simlops jamesbondi Bonaldo, new species

Figures 164–176, 284, 308, 309, 326

TYPES: Male holotype and female paratype from Lago Janauari, Manaus, Amazonas, Brazil (3°12′38″S 60°1′55″W), Jan. 01, 1995, to Jan. 01, 1996, J. Adis col. (IBSP



Figs. 290–297. *Simlops* species, apex of left male palp. **290.** *S. pennai*, dorsal view. **291.** *S. pennai*, prolateral view. **292.** *S. miudo*, dorsal view. **293.** *S. miudo*, prolateral view. **294.** *S. machadoi*, dorsal view. **295.** *S. machadoi*, prolateral view. **296.** *S. similis*, dorsal view. **297.** *S. similis*, prolateral view.

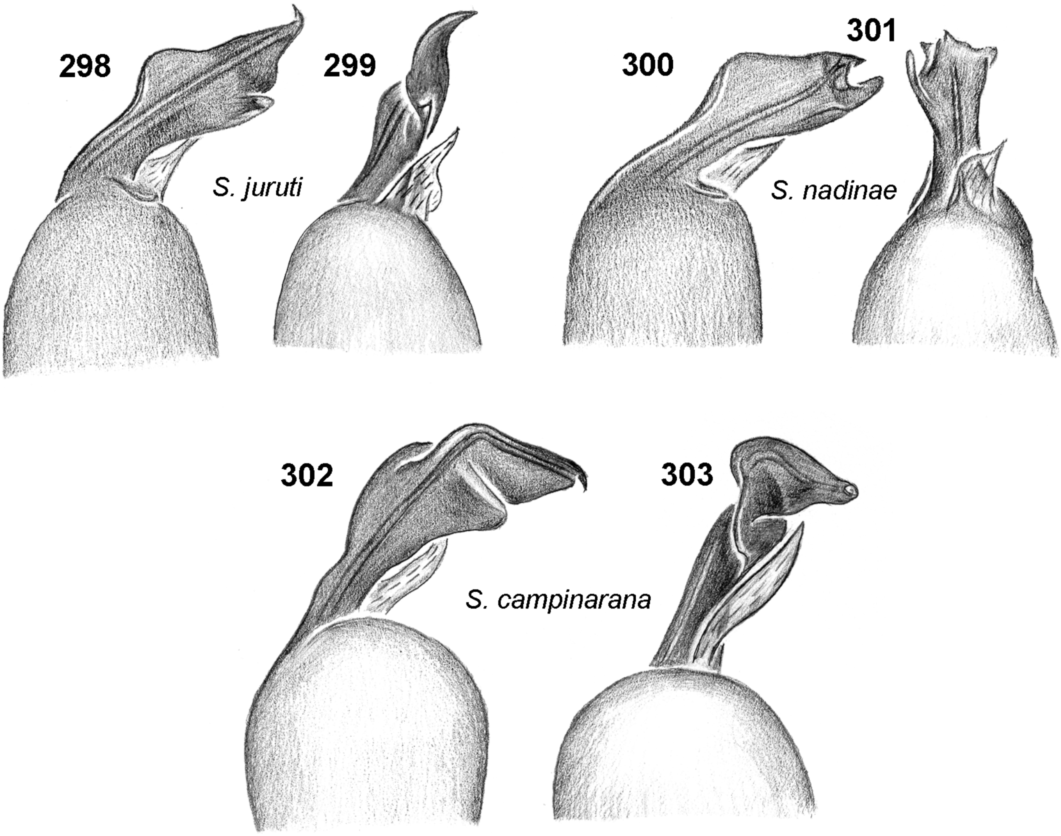
15080 PBI_OON 10941; IBSP 15124 PBI_OON 10942).

ETYMOLOGY: The species is named after the famous fictional character James Bond because its provisory name in the PBI database, CR007, included Bond's code number (007).

DIAGNOSIS: Males of *Simlops jamesbondi* are similar to those of *S. cachorro* and *S. platnicki* by the endites with retroapical process long and pointed prolaterally. They can be easily recognized by the long, subquadrangular conductor (figs. 308, 309). Females can be recognized by the combined presence of a long and robust anteromedian rod, with triangular apex and a nearly straight transverse bar (fig. 326).

MALE (PBI_OON 10941, figs. 164–171, 284, 308, 309): Total length 1.82. Carapace, sternum, and mouthparts red-brown, legs orange-brown, femora and basal half of tibiae darkened; abdomen soft portions pale orange, abdominal scuta red-brown. Sternal microsculpture medially and in furrows. Endites with prolateral process long, laminar in the distal third, slightly bent retrolaterally; retrolateral projection stout, with rounded tip, curved prolaterally, median process inconspicuous (fig. 284). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus with large retromedian expansion and subquadrate, retroapical lamellar prong; conductor heavily sclerotized, flattened, with blunt tip, originating from the bulbus, adjacent to embolar insertion (figs. 169–171, 308, 309).

FEMALE (PBI_OON 10942, figs. 172–176, 326): Total length 2.40. Dorsal scutum absent. Epigastric furrow medially straight, medially not sclerotized, without median notch, not connected laterally to anterior spiracles; postepigastric scutum not extending beyond groove connecting posterior spiracles, not enlarged laterally around pos-



Figs. 298–303. *Simlops* species, apex of left male palp. **298.** *S. juruti*, dorsal view. **299.** *S. juruti*, prolateral view. **300.** *S. nadinae*, dorsal view. **301.** *S. nadinae*, prolateral view. **302.** *S. campinarana*, dorsal view. **303.** *S. campinarana*, prolateral view.

terior spiracles, without discrete lateral sclerotizations. Genitalia with thick posteromedian rod, anterior end strongly enlarged, triangular; transverse bar almost straight, with large rectangular plate close to epigastric furrow and short, thick, convergent lateral apodemes (figs. 176, 326).

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality.

Simlops cachorro Ruiz, new species

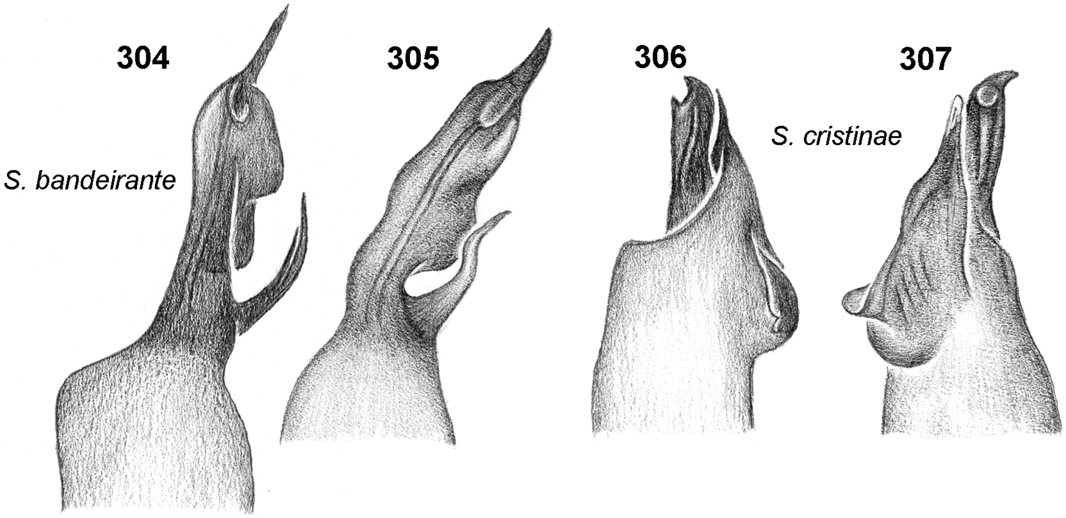
Figures 3, 9, 177–198, 285, 310, 311, 327

TYPES: Male holotype and female paratype from Quebradón El Ayo, La Pedrera, Amazonas, Colombia (1°01′21″N 69°35′13″W), Feb. 01, 2002, J. Pinzon, (ICN PBI_OON 40569; ICN PBI_OON 40576).

ETYMOLOGY: The specific name is a reference to the Cabeça do Cachorro (“dog’s head”) region, in extreme northwestern Brazil, along the Colombia border, from where the records of this species come from. (The region is so named because a drawing of the borders of Brazil and neighbor countries resembles a dog’s head.)

DIAGNOSIS: Males of *Simlops cachorro* differ from those of *S. jamesbondi* and *S. platnicki* by the complex, loosely attached conductor (figs. 310, 311); females can be recognized by the thin anteromedian rod, without apical enlargement (fig. 327).

MALE (PBI_OON 40569, figs. 3, 9, 177–190, 285, 310, 311): Total length 1.79. Carapace dark red-brown, sternum and mouthparts orange-brown; legs orange-brown, without color pattern; abdomen soft portions pale



Figs. 304–307. *Simlops* species, apex of left male palp. **304.** *S. bandeirante*, dorsal view. **305.** *S. bandeirante*, prolateral view. **306.** *S. cristinae*, dorsal view. **307.** *S. cristinae*, prolateral view.

white; abdominal scuta orange-brown. Sternal microsculpture medially and in furrows. Endites retrolateral projection stout, distally bulging, sculptured, with sharply pointed triangular process directed prolaterally; prolateral and median processes geminated (as seen in collapsed pieces for SEM, figs. 185, 186), prolateral process flat, blunt, curved retrolaterally (fig. 285). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Leg spination, tibiae: I p1-1-0; r1-1-0. Palp: embolus bent prolaterally, stout, about half as long as cymbium, with widened, sculptured subtriangular tip; conductor complex, loosely attached to base of embolus, but otherwise heavily sclerotized, with a distal, narrow branch and a proximal, flattened branch (figs. 182–184, 187–190, 310, 311).

FEMALE (PBI_OON 40570, figs. 191–198, 327): Total length 2.06. Dorsal scutum absent. Leg spination, tibiae: I p1-1-0; r1-1-0. Epigastric furrow medially straight, medially sclerotized, without median notch, connected laterally to anterior spiracles; postepigastric scutum with anterior margin sclerotized, not extending beyond groove connecting posterior spiracles, not enlarged laterally around posterior spiracles, without discrete lateral sclerotizations. Genitalia with thin posteromedian rod, anterior end pointed, without enlargement; transverse bar thick, straight, with large rectangular plate close to epigastric furrow and short, thick, parallel lateral apodemes (figs. 198, 327).

OTHER MATERIAL EXAMINED: **COLOMBIA:** *Amazonas:* La Pedrera, (Quebradón El Ayo, 1°01′21″N 69°35′13″W), Feb. 01, 2002, J. Pinzon, 1♂ (ICN PBI_OON 40730). *Vaupes:* Taraira (Lago Taraira, bajo Río Apaporis, Est Biol. Caparú, 200m, 1°5′S 69°32′W), Feb. 04, 2004, J. Pinzon, 5♂ (ICN PBI_OON 40570); 3♀ (ICN PBI_OON 40570); Feb. 04, 2004, J. Pinzon, 1♂ (MPEG 19162 PBI_OON 40729); 1♀ (MPEG 19162 PBI_OON 40729).

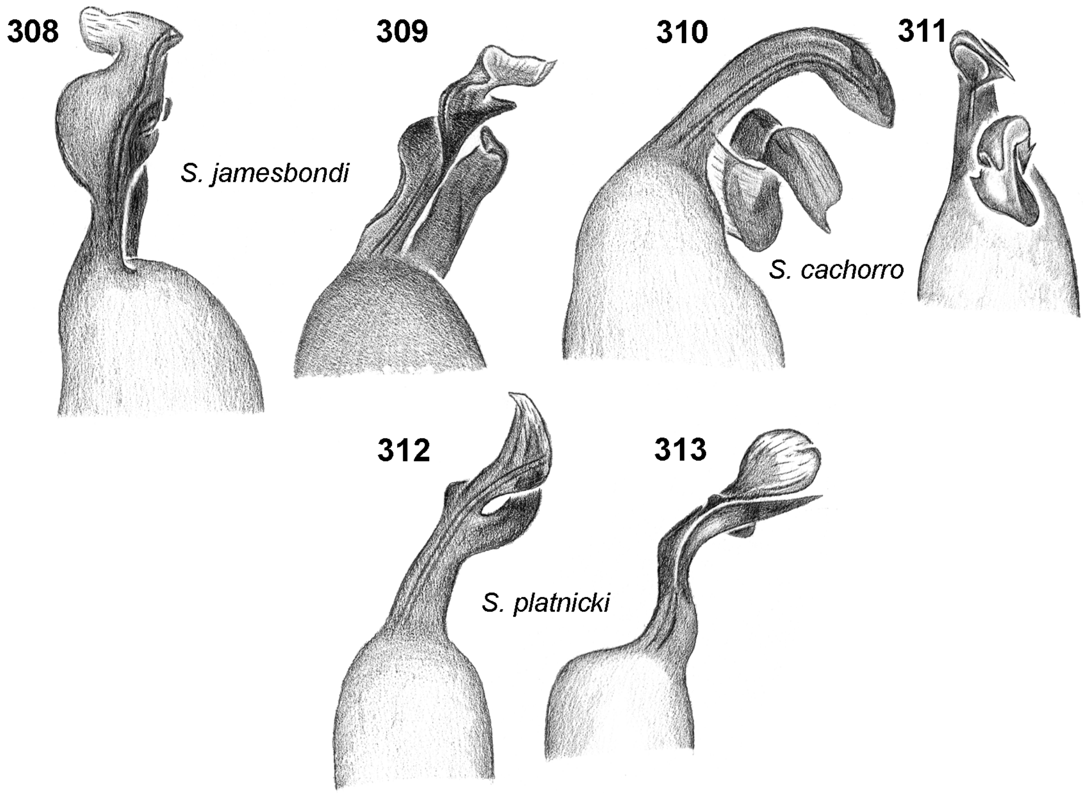
DISTRIBUTION: Known from Colombian Amazonia, near Brazilian border.

Simlops platnicki Bonaldo, new species

Figures 4–6, 10–12, 27, 28, 199–228, 286, 312, 313, 328

TYPES: Male holotype from Base de Operações Geólogo Pedro de Moura, Porto Urucu, Coari, Amazonas, Brazil (04°52′7.6″S 65°15′53.6″W), July 11, 2003 to July 20, 2003, A.B. Bonaldo, J.D. Dias, and D.D. Guimarães col. (MPEG 10208 PBI_OON 40731); female paratype from same locality Nov. 01, 2006, S.C. Dias et al., col. (MPEG 19166 PBI_OON 40732).

ETYMOLOGY: The specific name is a patronym in honor of Norman I. Platnick



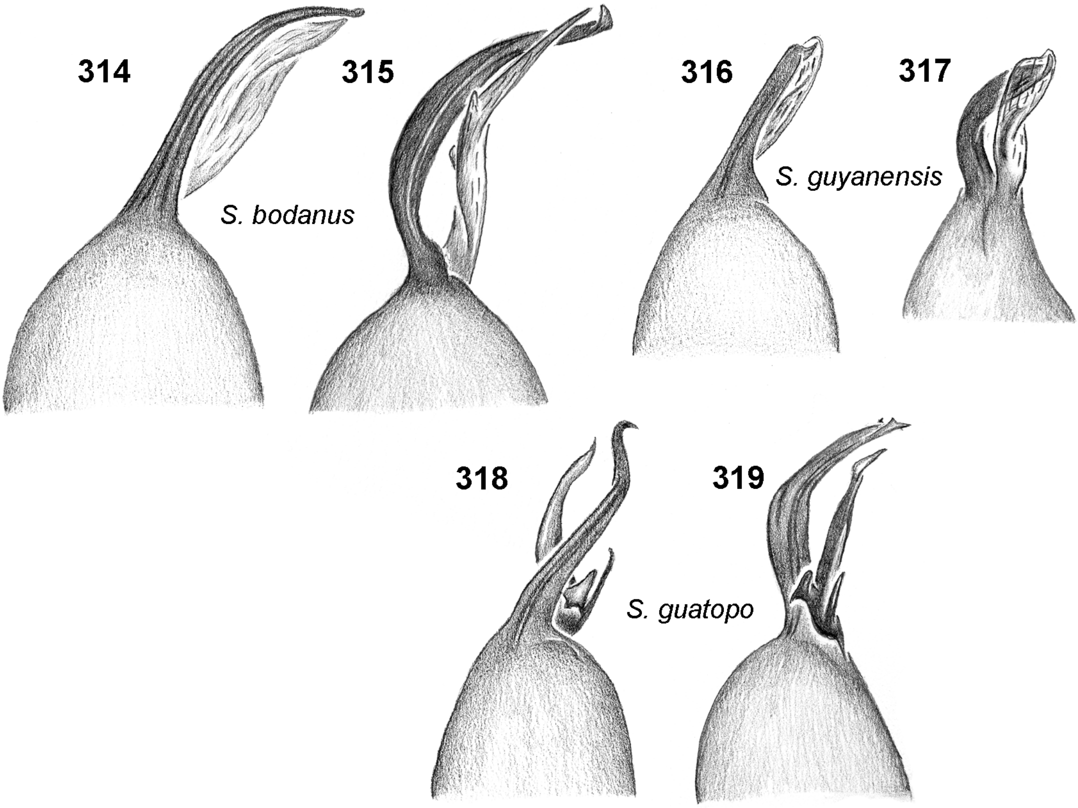
Figs. 308–313. *Simlops* species, apex of left male palp. **308.** *S. jamesbondi*, dorsal view. **309.** *S. jamesbondi*, prolateral view. **310.** *S. cachorro*, dorsal view. **311.** *S. cachorro*, prolateral view. **312.** *S. platnicki*, dorsal view. **313.** *S. platnicki*, prolateral view.

(AMNH), the first one to recognize this species as a ''highly autapomorphic *Niarchos*-like species.''

DIAGNOSIS: Males of *Simlops platnicki* differ from those of *S. jamesbondi* and *S. cachorro* by the extremely long retroapical process at the endites (fig. 286) and by the pointed conductor, inserted at the middle of the embolus (figs. 312, 313). Females can be readily recognized by the short, robust, bush-shaped anteromedian rod, with wide triangular apex and by the thick transverse bar (fig. 328).

MALE (PBI_OON_0040500, figs. 4, 10–12, 199–216, 286, 312, 313): Total length 1.63. Carapace and sternum pale orange, mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions yellow, abdominal scuta pale orange. Sternal microsculpture only in furrows. Endites with retrolateral process extremely developed, tubular, with blunt, sculptured apices and apical projection directed prolaterally; prolateral process thin, gently curved retrolaterally; prolateral and median processes geminated; median process protruded (figs. 207–210, 286). Postepigastric scutum almost rectangular, covering about 2/3 of abdominal length. Leg spination, tibiae: IV p0-0-1. Palp: embolus gently curved medially, with small retromedian expansion and rounded, retroapical lamellar prong; conductor heavily sclerotized, hook shaped, originating at the embolar body (figs. 204–206, 213–216, 312, 313).

FEMALE (PBI_OON 40501, figs. 5, 6, 27, 28, 217–228, 328): Total length 1.84. Dorsal scutum absent. Leg spination, tibiae: I v2-2-1r; II v2-2-0; III p0-1-0; IV p1-1-0; metatarsi: I v2-2-0. Epigastric furrow medially straight, medially sclerotized, without median notch, not connected laterally to



Figs. 314–319. *Simlops* species, apex of left male palp. **314.** *S. bodanus*, dorsal view. **315.** *S. bodanus*, prolateral view. **316.** *S. guyanensis*, dorsal view. **317.** *S. guyanensis*, prolateral view. **318.** *S. guatopo*, dorsal view. **319.** *S. guatopo*, prolateral view.

anterior spiracles; postepigastric scutum with anterior margin sclerotized, not extending beyond groove connecting posterior spiracles, not enlarged laterally around posterior spiracles, without discrete lateral sclerotizations. Genitalia with short, robust posteromedian rod, anterior end large, triangular; transverse bar thick, straight, with large rectangular plate, bearing anterior porous area of circular pits, and long, thick, parallel lateral apodemes (figs. 224, 225–228, 328).

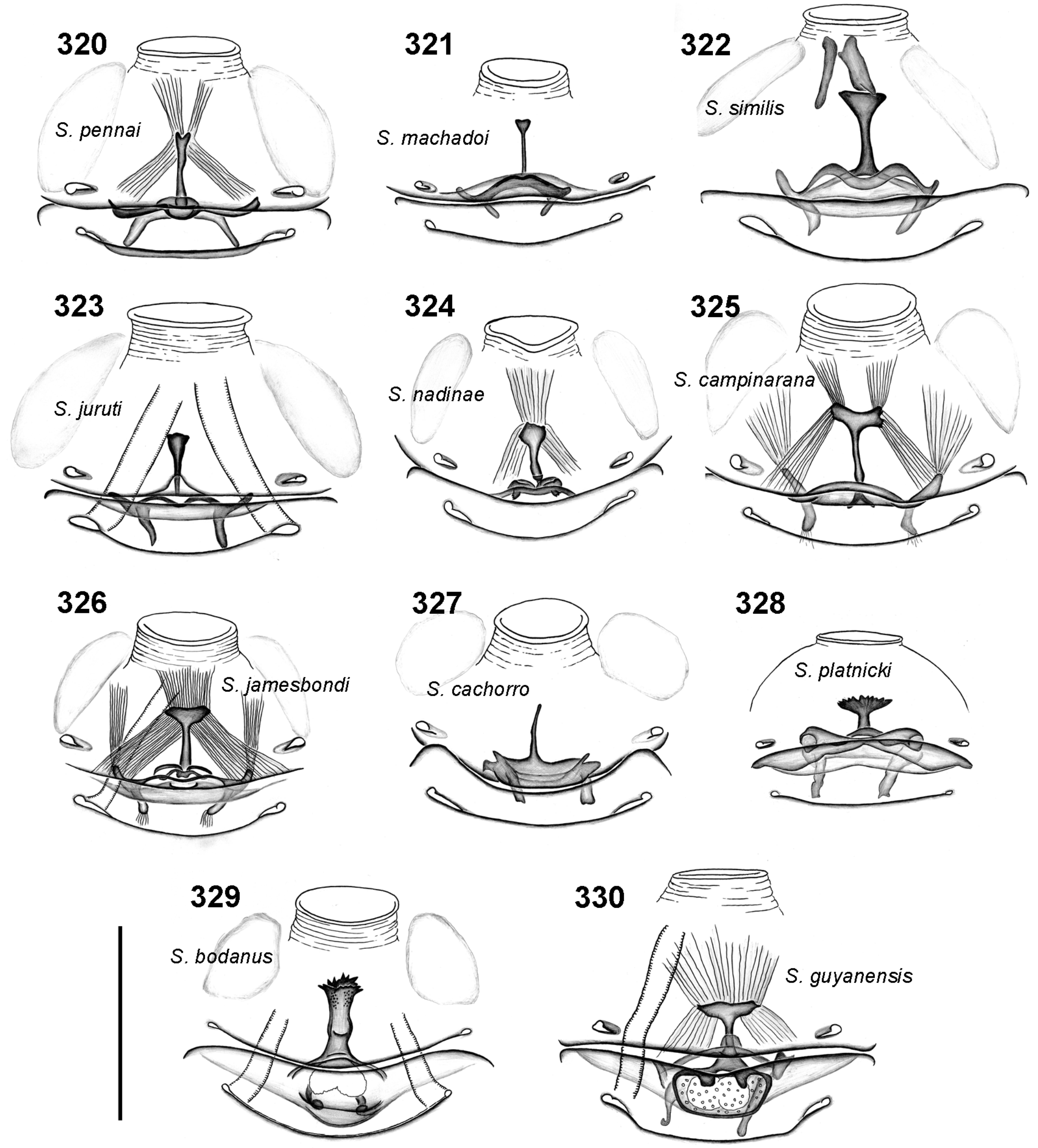
OTHER MATERIAL EXAMINED: **BRAZIL:** Amazonas: Coari (Base de Operações Geólogo Pedro de Moura, Porto Urucu, 04°52′7.6″S 65°15′53.6″W), Nov. 09, 2006, S.C. Dias et al., 1♂ (AMNH PBI_OON 40500); July 11, 2003 to July 20, 2003, 1♀ (MPEG 10216 PBI_OON 40501); July 11, 2003 to July 20, 2003, 1♀ (MPEG 10221 PBI_OON 40502); July 11, 2003 to July 20, 2003, 1♂ (MPEG 10229 PBI_OON 40509); July 11, 2003 to July 20, 2003, 1♀ (MPEG 10222 PBI_OON 40733); July 11, 2003 to July 20, 2003, 1♂ (MPEG 10210 PBI_OON 40734); all collected by A.B. Bonaldo, J.D. Dias and D.D. Guimarães; Nov. 24, 2004, A.B. Bonaldo et al., 1♂ (INPA 161825 PBI_OON 40735); July 09, 2006, S.C. Dias et al., 1♀ (AMNH PBI_OON 40736); Nov. 21, 2004, A.B. Bonaldo et al., 1♂ (IBSP 161825 PBI_OON 43639).

DISTRIBUTION: Known only from the type locality.

Simlops bodanus (Chickering), new combination

Figures 7, 21–24, 229–250, 287, 314, 315, 329

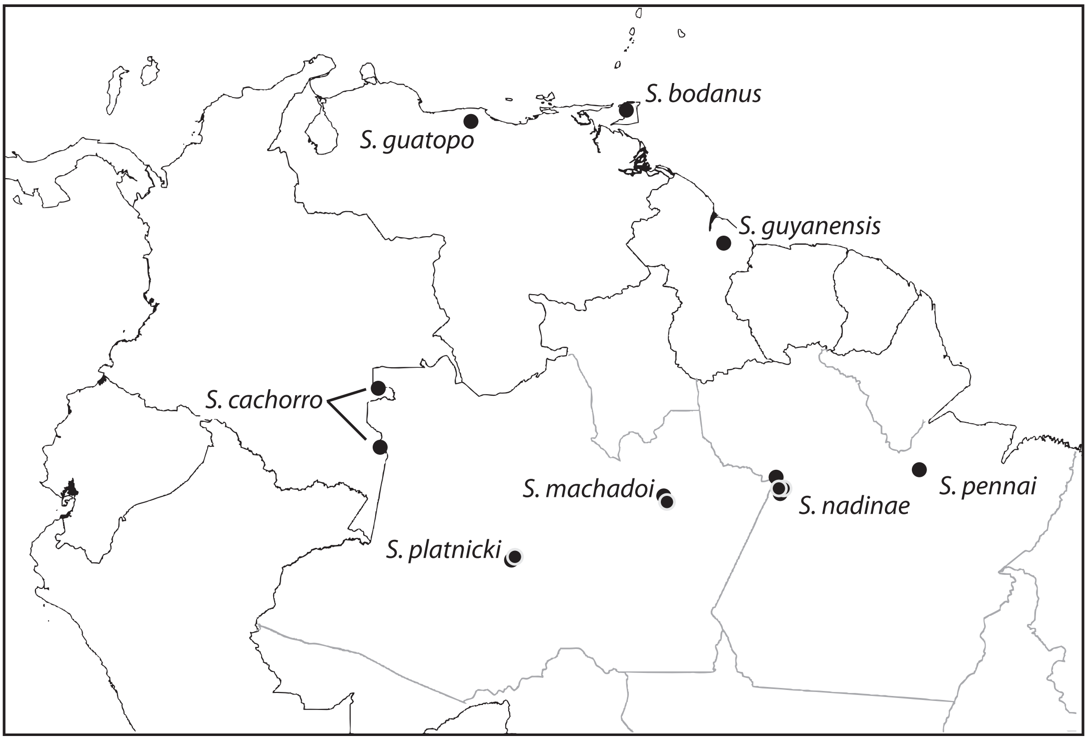
Triaeris bodanus Chickering, 1968: 353, figs. 1–5 (male holotype from Simla [currently William Beebe Tropical Research Station, 10°41′1″N


320
S. pennai
321
S. machadoi
322
S. similis
323
S. juruti
324
S. nadinae
325
S. campinarana
326
S. jamesbondi
327
S. cachorro
328
S. platnicki
329
S. bodanus
330
S. guyanensis

Figs. 320–330. *Simlops* species, cleared epigynal area, ventral view. **320.** *S. pennai.* **321.** *S. machadoi.* **322.** *S. similis.* **323.** *S. juruti.* **324.** *S. nadinae.* **325.** *S. campinarana.* **326.** *S. jamesbondi.* **327.** *S. cachorro.* **328.** *S. platnicki.* **329.** *S. bodanus.* **330.** *S. guyanensis.* Scale bar: 0.25 mm (except figs. 324, 330, 0.5 mm).

61°16′59″W], Arima Valley, Saint George, Trinidad and Tobago, Apr. 25, 1964, A.M. Chickering col., in MCZ 20549 PBI_OON 5393, examined).

DIAGNOSIS: Males of *Simlops bodanus* resembles those of *S. guyanensis* and *S. guatopo* by the filiform distal third of embolus but can be recognized by the combined presence of longer embolus, with a basal constriction, and a massive hyaline conductor, without basal sclerotizations (figs. 314, 315). Females are unique in the genus in



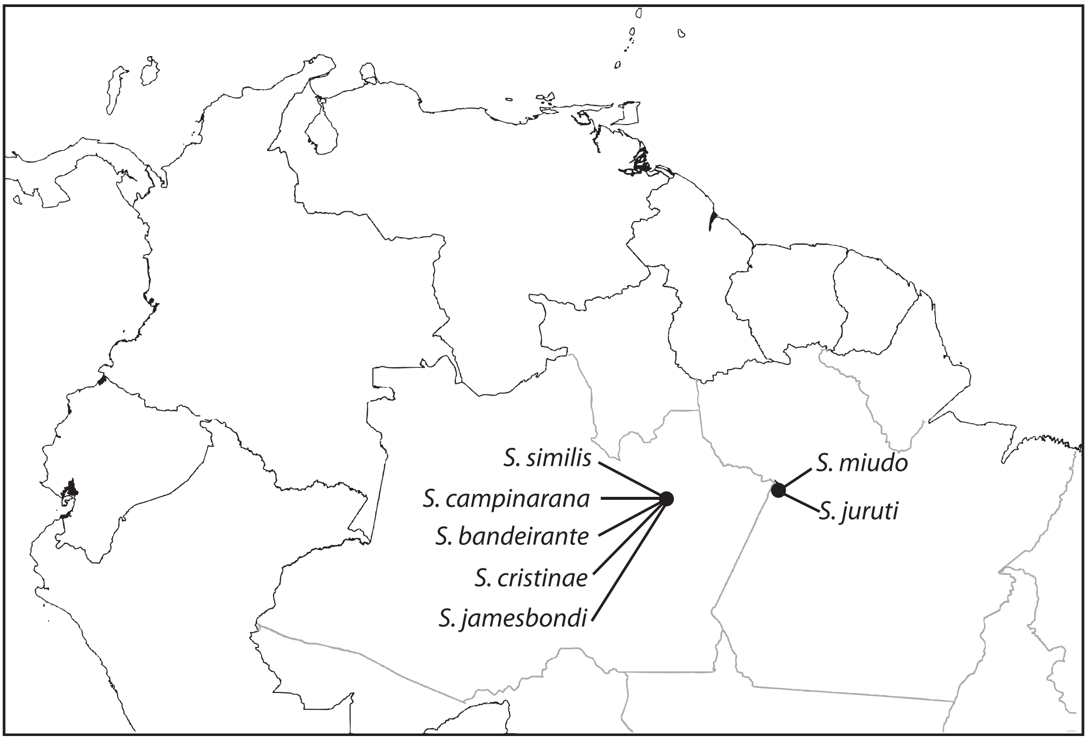
Map 1. Geographic distribution records of *Simlops* species: *bodanus, cachorro, guatopo, guyanensis, machadoi, nadinae, pennai,* and *platnicki.*

presenting a small, round, anteriorly positioned dorsal abdominal scutum (fig. 248); they are also remarkable for the wide, tubular-shaped anteromedian rod (fig. 329).

MALE (PBI_OON 5393, figs. 7, 21–24, 229–242, 287, 314, 315): Total length 1.80. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions pale white; abdominal scuta orange-brown. Sternal microsculpture covering almost entire surface, absent in front of coxae. Endites with retrolateral and median processes inconspicuous; prolateral projection long and slender, folded retrolaterally, with a distal, posteriorly projected small triangular process (figs. 237, 238, 287). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus long, slender, tip curved dorsally, conductor as long as embolus, semitranslucent with dorsal sclerotized strip, distally with short, filiform processes, originating at the bulbus, adjacent to embolar insertion (figs. 234–236, 239–242, 314, 315).

FEMALE (PBI_OON 37039, figs. 243–250, 329): Total length 2.40. Dorsal scutum present, oval, small, restricted to front of abdomen. Epigastric furrow medially slightly recurved, not medially sclerotized, without median notch, not connected laterally to anterior spiracles; postepigastric scutum with anterior margin not sclerotized, extending well beyond groove connecting posterior spiracles, enlarged laterally around posterior spiracles, without discrete lateral sclerotizations. Genitalia with strong, tubular posteromedian rod, anterior end blunt, with spinelike processes; transverse bar thin, procurved, without rectangular plate; posterior receptaculum conspicuous, rounded, with unsclerotized borders, enclosed by long, parallel lateral apodemes (figs. 250, 329).

MATERIAL EXAMINED: **TRINIDAD AND TOBAGO: Saint George:** *Arima Valley*: Simla (currently William Beebe Tropical Research Station, 10.68361°, -61.28333°), Feb. 10, 1964,



Map 2. Geographic distribution records of *Simlops* species: *bandeirante, campinarana, cristinae, jamesbondi, juruti, miudo,* and *similis.*

to Feb. 22, 1964, 1♂ (AMNH PBI_OON 1846); Feb. 10, 1964, to Feb. 22, 1964, 2♀ (AMNH PBI_OON 38008); Feb. 10, 1964, to Feb. 22, 1964, 1♂ (AMNH PBI_OON 38009); 2♀ (AMNH PBI_OON 38009), all collected by Wygodzinsky and Rozen; Apr. 22, 1964, N.A. Weber, 1♂ (AMNH PBI_OON 37038); Jan. 01, 1964, 1♂ (MCZ PBI_OON 37037); Apr. 28, 1964, 7♀ (MCZ PBI_OON 37039); 5♂ (MCZ PBI_OON 37039); Apr. 23, 1964, 1♀ (MCZ PBI_OON 37040); Apr. 26, 1964, 2♀ (MCZ PBI_OON 37041); Apr. 19, 1964, 3♀ (MCZ PBI_OON 37042); 1♂ (MCZ PBI_OON 37042); Apr. 20, 1964, to Apr. 21, 1964, 1♀ (MCZ PBI_OON 37043); 1♂ (MCZ PBI_OON 37043); Apr. 18, 1964, 1♀ (MCZ PBI_OON 37044); Apr. 17, 1964, 3♀ (MCZ PBI_OON 37045); Apr. 12, 1964, 1♂ (MCZ PBI_OON 37046); 1♀ (MCZ PBI_OON 37046); Apr. 05, 1964, 3♀ (MCZ PBI_OON 37047); Apr. 16, 1964, 4♀ (MCZ PBI_OON 37048); 3♂ (MCZ PBI_OON 37048); Apr. 26, 1964, 1♂ (MCZ PBI_OON 37049); 1♀ (MCZ PBI_OON 37049); Apr. 26, 1964, 1♀ (MCZ PBI_OON 37051); 3♂ (MCZ PBI_OON 37051); Apr. 26, 1964, 1♂ (MCZ PBI_OON 37052); Apr. 26, 1964, A.M. Chickering, 1♀ (MPEG 19158 PBI_OON 40728); 1♂ (MCZ 19158 PBI_OON 40728), all collected by A.M. Chickering; Jan. 01, 1964, N.G. Weber, 1♂ (AMNH PBI_OON 37050).

DISTRIBUTION: Known only from the type locality.

Simlops guyanensis Santos, new species
Figures 251–266, 288, 316, 317, 330

TYPES: Male holotype and female paratype from Kartabo, Cuyuni-Mazaruni region, Guyana (6°0′N, 58°0′W), July 03, 1982, to July 12, 1982, K., R. Schmidt col. (AMNH PBI_OON 40575; AMNH PBI_OON 1018).

ETYMOLOGY: The specific name, to be treated as a Latin adjective, refers to the type locality.

DIAGNOSIS: Males of *Simlops guyanensis* differ from those of *S. bodanus* and *S. guatopo* by the combined presence of short embolus, without basal constriction, and a massive hyaline conductor, without basal sclerotizations (figs. 316, 317). Females do not have a separated dorsal abdominal scutum, but the frontal margin of the epigastric scutum presents a median protrusion (fig. 264); they resemble *S. bodanus* by the presence of a well-defined posterior receptaculum, but can be readily separated from that species by the T-shaped anteromedian rod (fig. 330).

MALE (PBI_OON 1018, figs. 251–258, 288, 316, 317): Total length 1.83. Carapace dark red-brown; sternum and mouthparts orange-brown, legs orange-brown, without color pattern; abdomen soft portions pale white, abdominal scuta orange-brown. Sternal microsculpture only in furrows. Endites with prolateral process stout laminar, sharply pointed, slightly bent retrolaterally; retrolateral projection small, triangular, slightly curved prolaterally, median process not protruded (fig. 288). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus relatively short, slender, tip pointed apically, conductor as long as embolus, semitranslucent, with dark sclerotized stripe, originating at the bulbus, adjacent to embolar insertion (figs. 256–258, 316, 317).

FEMALE (PBI_OON 1018, figs. 259–266, 330): Total length 2.34. Dorsal scutum absent. Epigastric furrow medially slightly recurved, not medially sclerotized, without median notch, not connected laterally to anterior spiracles; postepigastric scutum with anterior margin slightly sclerotized, not extending beyond groove connecting posterior spiracles, not enlarged laterally around posterior spiracles, without discrete lateral sclerotizations. Genitalia with T-shaped posteromedian rod, anterior end large; transverse bar thin, procurved, without rectangular plate; posterior receptaculum conspicuous, subquadrangular, with sclerotized borders, enclosed by long, parallel lateral apodemes (figs. 266, 330).

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality.

Simlops guatopo Brescovit, new species

Figures 267–274, 289, 318, 319

TYPE: Male holotype from Agua Blanca, Parque Nacional Guatopo, 35 km N Altagracia, Miranda, Venezuela (400m, 10°11′30″N 66°29′45″W), May 31, 1987, S., J. Peck, (AMNH PBI_OON 17).

ETYMOLOGY: The specific name is a name in apposition taken from the type locality.

DIAGNOSIS: Males of *Simlops guatopo* differ from those of *S. bodanus* and *S. guyanensis* by the partially sclerotized conductor, with complex basal sclerotizations (figs. 318, 319).

MALE (PBI_OON 17, figs. 267–274, 289, 318, 319): Total length 1.91. Carapace dark red-brown, sternum and mouthparts orange-brown, legs pale orange, without color pattern; abdomen soft portions pale white, abdominal scuta orange-brown. Sternal microsculpture covering almost entire surface, absent in front of coxae. Endites with retrolateral process small, thin, triangular, with tip slightly bent prolaterally; prolateral projection stout, flattened, slightly folded retrolaterally; median process not protruded (fig. 289). Postepigastric scutum almost semicircular, covering about 3/4 of abdominal length. Palp: embolus slender and sinuous, as long as 3/4 of cymbium length; conductor filiform, bearing a stout, pointed subbasal prolateral process and a basal needlelike process, originating at the bulbus, adjacent to embolar insertion (figs. 272–274, 318, 319).

FEMALE: Unknown.

OTHER MATERIAL EXAMINED: None.

DISTRIBUTION: Known only from the type locality.

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REFERENCES

Abrahim, N., et al. 2012. A revision of the Neotropical goblin spider genus *Neoxyphinus* Birabén, 1953 (Araneae, Oonopidae). American Museum Novitates 3743: 1–75.

Chickering, A.M. 1968. The genus *Triaeris* Simon (Araneae, Oonopidae) in Central America and the West Indies. Psyche 75: 351–359.

Grismado, C.J., C. Deeleman, and B. Baehr. 2011. The goblin spider genus *Aprusia* Simon, 1893 (Araneae: Oonopidae). American Museum Novitates 3706: 1–21.

Hijmans, R.J., et al. 2005. DIVA-GIS, version 5.2. Program and documentation available online (http://www.diva-gis.org), accessed May 2013.

Petrunkevitch, A. 1923. On families of spiders. Annals of the New York Academy of Sciences 29: 145–180.

Platnick, N.I., and N. Dupérré. 2009. The American goblin spiders of the new genus *Escaphiella* (Araneae, Oonopidae). Bulletin of the American Museum of Natural History 328: 1–151.

Platnick, N.I., and N. Dupérré. 2010a. The goblin spider genus *Scaphiella* (Araneae, Oonopidae). Bulletin of the American Museum of Natural History 332: 1–156.

Platnick, N.I., and N. Dupérré. 2010b. The goblin spider genera *Stenoonops* and *Australoonops* (Araneae, Oonopidae), with notes on related taxa. Bulletin of the American Museum of Natural History 340: 1–111.

Platnick, N.I., and N. Dupérré. 2010c. The Andean goblin spiders of the new genera *Niarchos* and *Scaphios* (Araneae, Onopidae). Bulletin of the American Museum of Natural History 345: 1–120.

Platnick, N.I., and N. Dupérré. 2011a. The Andean goblin spiders of the new genus *Scaphidysderina* (Araneae, Oonopidae), with notes on *Dysderina*. American Museum Novitates 3712: 1–51.

Platnick, N.I., and N. Dupérré. 2011b. The goblin spider genus *Pescennina* (Araneae, Oonopidae). American Museum Novitates 3716: 1–64.

Platnick, N.I., and N. Dupérré. 2011c. The goblin spider genus *Simonoonops* (Araneae, Oonopidae). American Museum Novitates 3724: 1–30.

Platnick, N.I., and N. Dupérré. 2011d. The Andean goblin spiders of the new genera *Paradysderina* and *Semidysderina* (Araneae, Oonopidae). Bulletin of the American Museum of Natural History 364: 1–121.

Platnick, N.I., and N. Dupérré. 2012. The goblin spider genus *Costarina* (Araneae, Oonopidae), Part 1. American Museum Novitates 3730: 1–64.

Platnick, N.I., et al. 2012a. Tarsal organ morphology and the phylogeny of goblin spiders (Araneae, Oonopidae), with notes on basal genera. American Museum Novitates 3736: 1–52.

Platnick, N.I., N. Dupérré, D. Ubick, and W. Fannes. 2012b. Got males?: the enigmatic goblin spider genus *Triaeris* (Araneae: Oonopidae). American Museum Novitates 3756: 1–36.

Platnick, N.I., L. Berniker, and Y. Kranz-Baltensperger. 2012c. The goblin spider genus *Ischnothyreus* (Araneae, Oonopidae) in the New World. American Museum Novitates 3759: 1–32.

Platnick, N.I., N. Dupérré, L. Berniker, and A.B. Bonaldo. 2013a. The goblin spider genera *Prodysderina*, *Aschnaoonops*, and *Bidysderina* (Araneae, Oonopidae). Bulletin of the American Museum of Natural History 373: 1–102.

Platnick, N.I., L. Berniker, and A.B. Bonaldo. 2013b. The South American goblin spider genera *Dysderina* and *Tridysderina* (Araneae, Oonopidae). American Museum Novitates 3772: 1–52.

Platnick, N.I., L. Berniker, and A.B. Bonaldo. 2013c. The South American goblin spiders of the new genera *Pseudodysderina* and *Tinadysderina* (Araneae, Oonopidae). American Museum Novitates 3787: 1–43.

Quantum GIS Development Team. 2012. Quantum GIS Geographic Information System. Open Source Geospatial Foundation Project. Program and documentation available online (http://qgis.osgeo.org), accessed May 2013.

Simon, E. 1893. Histoire naturelle des araignées:1: 257–488. Paris: Roret.

Ubick, D., and C.E. Griswold. 2011. The Malagasy goblin spiders of the new genus *Malagiella* (Araneae, Oonopidae). Bulletin of the American Museum of Natural History 356: 1–86.